

The following specification refers to the Stepstone, LLC product known as:

California Architectural Pavers

for Mortar-Set Concrete Tiling Installations



Stepstone, LLC also manufactures California Architectural Pavers for Sand-Set Installations that have their own unique three-part specification. If you need any additional information, please call Stepstone, LLC at 800-572-9029 or visit our website stepstoneprecast.com

July 2024

MORTAR-SET TILING WITH PRECAST CONCRETE PAVING UNITS

SECTION 093238

PART 1 ‑ GENERAL

* 1. SUMMARY
1. Perform all work required for a complete system, as indicated by the Contract Documents. Furnish all items necessary for the proper installation of the system.
2. System shall consist of precast concrete paving units for portland cement mortar-set on an engineered concrete slab for pedestrian or vehicular use installations (Certain sizes excluded from vehicular use. Please see size chart for specifics).
3. Related Sections: *Note to Specifier: Modify and/or insert appropriate sections.*
	1. Section 093036 Concrete tiling
	2. Section 093033 Stone tiling
	3. Section 036000 Grouting

1.2 REFERENCES

1. American Society for Testing and Materials (ASTM)

ASTM C33 Concrete Aggregates

ASTM C39 Concrete Compressive Strength

ASTM C144 Aggregate for Masonry Mortar

ASTM C150 Portland cement

ASTM C595 Standard Specification for Blended Hydraulic Cements

ASTM C642 Water Absorption, Density, Voids in Hardened Conc

ASTM C666 Rapid Freeze/Thaw Resistance of Conc

ASTM C979 Pigments for Integrally Colored Concrete

ASTM C1028 Coefficient of Friction

1. Concrete Tile Manufacturer’s Association (CTMA) Handbook for Concrete Tiles.

1.3 SUBMITTALS

1. Samples: Submit two full-sized samples of each type of precast concrete paving units to show the full range of color and texture of unit for selection and approval. If sealer is to be applied to precast concrete paving slab, apply sealer on one sample.
2. Warranty: Provide certified copies of manufacturer's product warranties.
3. Shop drawings (Optional)
	1. Layout drawings showing pattern of pavers for each paved area, indicate pavers requiring cutting, indicate setting bed methods in each area, and indicate drainage. Include details of setting beds. Indicate details at curbs and vertical surfaces as applicable.

1.4 MOCK-UP

1. Install a 6 ft x 10 ft minimum paver area as described in Article 3.2. Mock-up area to be used to determine joint sizes, lines, laying pattern, color(s) and texture of the job. Mock-up area to be the standard from which the work will be judged. Consideration will be given with regard to differences in age of materials from time of mock-up construction to the time of actual product delivery and installation.

1.5 SUBSTITUTIONS

1. Refer to Section () for procedures.

*Note to Specifier: Insert appropriate section.*

1. Proposed substitutions: No known equal.

1.6 QUALITY ASSURANCE

1. Compliance with Regulations: Comply with requirements of state and local building codes and with rules and regulations relating to building accessibility.
2. Qualifications of Manufacturer: Company specializing in manufacture of precast concrete paving units with a minimum of 10 continuous years of documented experience.
3. Qualifications of Subcontractor: Subcontractor shall submit evidence of skill and not less than 5 years of experience in this product type.
4. Pre-installation Conference: As directed by the Architect
5. Precast concrete paving units shall have a compressive strength of 5,000 PSI minimum.

1.7 DELIVERY, STORAGE AND HANDLING

1. Deliver all materials to the installation site in the manufacturer's original packaging. Packaging shall contain manufacturer's name, customer name, order, identification number, and other related information.
2. Handle and store precast concrete paving units in accordance with manufacturer's recommendations.

1.8 WARRANTY

1. Provide warranty covering precast concrete paving units against defects in material and workmanship for a period of 5 years. Unusual abuse and neglect are excepted.

PART 2 - PRODUCTS

2.1 MANUFACTURER

Stepstone, LLC

17025 South Main Street

Gardena, CA 90248

(310) 327-7474

(800) 572-9029

FAX (310) 217-1424

www.stepstoneinc.com

2.2 MATERIALS

1. Precast concrete paving units shall be California Architectural Pavers, precast concrete, consisting of Portland cement, aggregate, and color admixtures.
	1. Portland cement: ASTM C 150, Type III, high early strength.
	2. Aggregate: ASTM C 33.
	3. Color Admixture: By Davis Colors, or equal, as required to achieve color as selected.
	4. Aggregate for exposed aggregate surface: As selected.
	5. Portland Cement Mortar that meets or exceeds ANSI A118.4 requirements when mixed with water or a latex admixture, and is designed for installation of large format tile – Pedestrian Installation.
	6. Grout that meets or exceeds ANSI A118.7 when mixed with water or a latex admixture.
2. Precast concrete paving unit style:
	1. California Architectural Pavers: 2-1/2” thick or 2” thick
	2. Pavers shall have radius top edge to reduce chipping.
	3. All pavers have drafted sides.

2.3 COLORS AND FINISHES

1. Colors: Davis Colors (or equal), integral color admixture. Integral color shall be throughout entire product. Finish color shall not be added as a face mix.

*Note to Specifier: Select one or more of the standard colors. Custom colors are available.*

|  |  |  |
| --- | --- | --- |
| With Slag1401 Granada White1404 French Gray1405 Iceberg Green1406 Almond1407 Cafe Brown1410 Caramel1412 Agave1413 Porcelain1416 Brick Red1421 Kona1424 Pebble1425 Adobe | Without Slag1801 Granada White1804 French Gray1805 Iceberg Green1806 Almond1807 Cafe Brown1810 Caramel1812 Agave1813 Porcelain1816 Brick Red1821 Kona1824 Pebble1825 Adobe | Slate-Finish (Sonorastone)1501 Granada White1504 French Gray1506 Almond1507 Cafe Brown1510 Caramel1512 Agave1513 Porcelain1516 Brick Red1521 Kona1524 Pebble1525 Adobe |

*Note to Specifier: Select one or more of the finishes listed below.*

1. Finishes: Walking surfaces of precast concrete paving units shall have minimum coefficient of friction of 0.60, wet and dry.
	1. Sandblasted
		1. Light Sandblast
		2. Medium Sandblast
		3. Heavy Sandblast
	2. Slate, also known as “Sonorastone”
	3. Exposed aggregate
	4. False Joint Narrow Modular

*Note to Specifier: Include or delete a factory applied sealer, (item C below). Factory applied sealer provides minimal protection against freeze-thaw climates. Field applied sealer is mandatory in freeze-thaw climates. Specifier shall indicate if field applied sealer is required.*

1. Factory Application of Sealer: Factory apply one coat of penetrating sealer to all surfaces of paving units. Sealer shall be non-staining, penetrating material, suitable for exterior or interior use, type which does not discolor or darken the surface.
2. Field Application of Sealer:
	1. In geographic regions exposed to freeze-thaw conditions field-applied sealing the entire paving area, including joints, after installation is mandatory.
	2. Conform to sealer manufacturer's recommendations for application and maintenance of sealer.

2.4 PHYSICAL PROPERTIES

1. Compressive strength: Minimum 5,000 PSI.

*Note to Specifier: Select one or more of the sizes and finishes listed below. Not all sizes are available in all finishes. Refer to size and finish chart in section in 2.4.B to determine which finish is available in each size.*

1. Size and Finish Schedule:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Size | Sandblast | ExposedAgg. | Slate | False JointNMP |
|  7-7/8" x 15-7/8" x 2" | X |  |   |   |
| 11-7/8" x 11-7/8" x 1"\*\* | X |  |  |  |
| 11-7/8" x 11-7/8" x 2" | X | X | X |   |
| 11-7/8" x 23-7/8" x 1"\*\* | X |  |  |  |
| 11-7/8" x 23-7/8" x 2" | X | X | X |   |
| 15-7/8" x 15-7/8" x 2" | X | X |   |   |
| 17-7/8" x 17-7/8" x 2" | X | X | X |   |
| 17-7/8" x 23-7/8" x 2" | X | X | X |   |
| 17-7/8" x 35-7/8" x 2" | X | X | X |   |
| 23-7/8" x 23-7/8" x 2" | X | X | X | X |
| 5-7/8" x 11-7/8" x 2-1/2" | X |  |  |  |
| 5-7/8" x 17-7/8" x 2-1/2" | X |  |  |  |
| 5-7/8" x 23-7/8" x 2-1/2" | X |  |  |  |
| 5-7/8" x 35-7/8" x 2-1/2"\* | X |  |  |  |
| 5-7/8" x 47-7/8" x 2-1/2"\* | X |  |  |  |
| 11-7/8" x 11-7/8" x 2-1/2" | X | X |  |  |
| 11-7/8" x 17-7/8" x 2-1/2" | X |  |  |  |
| 11-7/8" x 23-7/8" x 2-1/2" | X | X |  |  |
| 11-7/8" x 35-7/8" x 2-1/2"\* | X |  |  |  |
| 11-7/8" x 47-7/8" x 2-1/2"\* | X |  |  |  |
| 17-7/8" x 17-7/8" x 2-1/2" | X | X |  |  |
| 17-7/8" x 23-7/8" x 2-1/2" | X | X |  |  |
| 17-7/8" x 35-7/8" x 2-1/2" | X | X |  |  |
| 17-7/8" x 47-7/8" x 2-1/2" | X | X |  |  |
| 17-7/8" x 59-7/8" x 2-1/2" | X | X |  |  |
| 23-7/8" x 23-7/8" x 2-1/2" | X | X |  |  |
| 23-7/8" x 35-7/8" x 2-1/2" | X |  |  |  |
| 23-7/8" x 47-7/8" x 2-1/2" | X |  |   |   |
| 29-7/8" x 29-7/8" x 2-1/2" | X |  |  |  |
| 35-7/8" x 35-7/8" x 2-1/2" | X |  |   |   |

\*Omitted from vehicular use.

\*\*Omitted from vehicular use and must be mortar set.

1. Unit size: Within 1/8” of designated length, width and thickness.
2. Weight:
	1. California Architectural Paver 2” thick: 22 pounds per square foot.
	2. California Architectural Paver 2-1/2” thick: 28 pounds per square foot.
3. Water absorption: Not more than 6.0 % average, not more than 7.0 % for any individual unit for standard colors.
4. California Architectural Pavers will contain on average 5% entrained air, with no individual piece under 4%.
5. Resistance to Freeze-Thaw: California Architectural Pavers will resist 300 freeze thaw cycles in accordance with ASTM C666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.

2.5 FABRICATION

1. California Architectural Pavers shall be hand-made, wet-cast of cement conforming to ASTM C 150, Type III, aggregates conforming to ASTM C 33, and pigments for integrally colored concrete conforming to ASTM C979.

* 1. SOURCE QUALITY CONTROL
1. Concrete for California Architectural Pavers shall be tested frequently to assure that mixes provide units having not less than 5,000 PSI compressive strength at 28 days (average test strength not less than 4,500 PSI).

PART 3 - EXECUTION

3.1 EXAMINATION

1. Examine all surfaces.
2. Verify all dimensions of in-place and subsequent construction.
3. Notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work.
4. Do not proceed with the work until unsatisfactory conditions have been corrected.
5. Installation of precast concrete pavers and associated construction constitutes acceptance of the adjacent and underlying construction.

3.2 INSTALLATION - GENERAL

1. Installation shall comply with requirements of applicable building codes and state and local jurisdictions.
2. Install California Architectural Pavers in a mortar bed in accordance with the specifications defined in the CTMA Handbook for Concrete Tiles, available at <http://www.stepstoneinc.com/docs/ctma_handbook.pdf> Maintain straight pattern lines.
3. 100% paver bonding coverage is recommended, with a minimum acceptable coverage of 95% for exterior installations or 80% for interior installations. Backbuttering is mandatory to obtain a minimum of 95% coverage.
4. Clean any mortar off the face of the pavers immediately. Never leave a 'cement haze' on the concrete paver’s surface.
5. Provide for expansion and control joints as specified per TCA detail EJ-171-current year. Follow expansion and control joint materials manufacturer’s instructions.
6. Typical joints between the pavers at the top of paving surface shall be roughly 3/16” to 1/4” wide. Refer to Section 2.4.C for standard dimensional paver tolerances. (Note: Recommended minimum spacing at bottom of pavers is 1/16”.”)
7. Place grout between California Architectural Pavers in accordance with the specifications defined in the CTMA Handbook for Concrete Tiles, available at <http://www.stepstoneinc.com/docs/ctma_handbook.pdf>
8. Follow grout manufacturer’s directions for use of grout. Grout shall fill joint completely.
9. California Architectural Pavers are concrete and the cementitious material in grout will permanently bond to the pavers. Clean any grout off the face of the pavers immediately. Never leave a ‘cement haze’ on the concrete paver’s surface.

3.3 CLEANING

1. Clean exposed surfaces of precast concrete paving units. Use cleaners appropriate for precast concrete finishes and colors. Acid based cleaners will permanently alter finish and color.

3.4 SEALING

1. Field-applied sealer for the prevention of freeze-thaw is optional in mild climates. If precast concrete paving units are factory sealed, test for compatibility before applying additional sealer.
2. In geographic regions exposed to freeze-thaw conditions field-applied sealing the entire paving area, including joints, after installation is mandatory in order to maintain Stepstone's warranty. Follow sealer manufacturer’s instructions for application and maintenance of the sealer.

3.5 COMPLETION

1. Protect precast concrete paving units from damage due to subsequent building operations.
2. After installation and before completion, inspect precast concrete paving units for construction damage and obtain new precast concrete paving units if required.
3. Immediately prior to final acceptance of project, clean precast concrete paving units.

END OF SECTION