

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

Reinforced California Architectural

Roof Pavers, Pedestal Supported



Stepstone, Inc. also manufactures

California Architectural Pavers

for Mortar-Set and Sand-Set Installations that have their own unique three-part specification. If you need any additional information please call Stepstone, Inc. at 800-572-9029 or visit our website www.stepstoneinc.com.

March 2023

SECTION 077600

REINFORCED PRECAST CONCRETE ROOF PAVERS, PEDESTAL SUPPORTED

PART 1 ‑ GENERAL

1.1 SUMMARY

1. Perform all work required for a complete system, as indicated by the Documents. Furnish all items necessary for the proper installation of the system.
2. System shall consist of reinforced precast concrete roof pavers for pedestal set roof/deck installation.
3. Related Sections: Note *to Specifier: Modify and/or Insert appropriate sections.*
4. Section 077613 Roof Ballast Pavers
5. Section 077616 Roof Decking Pavers
6. Section 075000 Membrane Roofing
7. Section 077246 Roof Walkways

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

ASTM A185 Steel Welded Wire Reinforcement for Concrete

1. Paving installations shall be designed in consultation with a qualified engineer, in accordance with established roof paving design procedures.
2. Refer to pedestal manufacturer’s instructions for proper use of pedestals.

1.3 SUBMITTALS

1. Samples: Submit two full-sized samples of each type of precast concrete roof pavers to show the full range of color and texture of unit for selection and approval. If sealer is to be applied to precast concrete roof pavers, apply sealer on one sample.
2. Warranty: Provide certified copies of manufacturer's product warranties.
3. Shop drawings (Optional)
4. 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.*
2. 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
3. Company specializing in manufacture of precast concrete paving units with a minimum of 10 continuous years of documented experience.
4. Must have a minimum of 5 years of documented experience manufacturing large-scale segmental paving units.
5. Qualifications of Subcontractor: Subcontractor shall submit evidence of skill and not less than 5 years of experience in this product type.
6. Pre-installation Conference: As directed by the Architect
7. 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 roof pavers in accordance with manufacturer's recommendations.

1.8 WARRANTY

1. Provide warranty covering pedestal set precast concrete roof pavers 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, Inc.

 17025 South Main Street, Gardena, CA 90248

 (310) 327-7474 (800) 572-9029 FAX (310) 217-1424

 stepstoneinc.com

2.2 MATERIALS

1. Precast concrete roof pavers shall be Reinforced Precast Concrete Roof Pavers, pedestal supported; consisting of Portland cement, aggregate, and color admixtures.
2. Portland Cement: ASTM C 150, Type III, high early strength.
3. Aggregate: ASTM C 33.
4. Color Admixture: By Davis Colors, or equal, as required to achieve color as selected.
5. Aggregate for exposed aggregate surface: As selected
6. Zinc-Plated Welded wire mesh panel: ASTM A 185
7. Adjustable Deck Supports (Pedestals): By Bison, Appian Way Sales, PAVE-EL or equal:
8. Precast Concrete Roof Paver style
9. California Architectural Pavers: 2” or 2-1/2” thick (Specifier: See size chart in Section 2.4.B)
10. Pavers shall have radius top edge to reduce chipping.
11. 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 |

1. Finishes: Walking surfaces of precast concrete paving slab shall have minimum coefficient of friction of 0.60, wet and dry.

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

1. Sandblasted (Light, Medium or Heavy) Specifier select from the options.
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
3. In geographic regions exposed to freeze-thaw conditions field-applied sealing the entire paving area, after installation is mandatory.
4. 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 listed below.*

1. Size and Finish Schedule:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Size | Sandblast | Exposed Agg | Slate | False JointNMP | False Joint |
| 11-7/8" x 11-7/8" x 2" |  |  |  |  |  |
| 11-7/8" x 23-7/8" x 2" | X | 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 | X |
| 23-7/8" x 35-7/8" x 2" | X | X | X |  | 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 | X |  |  | X |
| 11-7/8" x 47-7/8" x 2-1/2" | X | X |  |  | X |
| 11-7/8" x 59-7/8" x 2-1/2" | X | X |  |  |  |
| 17-7/8" x 17-7/8" 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 |  |  |  |
| 23-7/8" x 23-7/8" x 2-1/2" | X | X | X |  |  |
| 23-7/8" x 35-7/8" x 2-1/2" | X | X |  |  | X |
| 23-7/8" x 47-7/8" x 2-1/2" | X | X |  |  | X |
| 23-7/8" x 59-7/8" x 2-1/2" | X | X |  |  |  |
| 29-7/8" x 29-7/8" x 2-1/2" | X | X |  |  |  |
| 35-7/8" x 35-7/8" x 2-1/2" | X | X |  |  |  |
|  |  |  |  |  |  |

1. Unit size: Within 1/8” of designated length, width and thickness.
2. Weight: 2” thick: 22 pounds per square foot

2-1/2” thick: 28 pounds per square foot

1. Water absorption: Not more than 6.0 % average, not more than 7.0 % for any individual unit for standard colors.
2. Reinforced California Architectural Pedestal Set Pavers will contain on average 5% entrained air, with no individual piece under 4%.
3. Resistance to Freeze-Thaw: Reinforced California Architectural Pedestal Set 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. Reinforced California Architectural Pedestal Set Pavers shall be fabricated 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.

2.6 SOURCE QUALITY CONTROL

1. Concrete for Reinforced California Architectural Pedestal Set 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).
2. Minor chips, hairline cracks, air voids and slight variations in color and finish are normal in precast concrete. When viewed in typical daylight illumination from a distance of 20 feet, minor chips, hairline cracks and air voids that cannot be seen with the naked eye are not grounds for rejection.

PART 3 - EXECUTION

3.1 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.
3. Verify all elevations, required pedestal heights and deck dimensions before commencing work.
4. Reinforced California Architectural Pedestal Set Pavers specified are to be used only in pedestrian traffic areas.

3.2 INSTALLATION - GENERAL

1. Installation shall comply with requirements of applicable building codes and state and local jurisdictions.
2. Reinforced California Architectural Pedestal Set Pavers can span a maximum of 36”. Pavers larger than 36” require mid-span pedestal support.
3. Refer to chosen pedestal manufacturer’s installation specifications.
4. Typical joints between the pavers at the top of paving surface shall be roughly 3/16” to 1/4” wide when using a 1/8" Spacer. Refer to Section 2.4C for standard dimensional paver tolerances. (Note: Recommended spacing at bottom of pavers is 1/8”.)
5. For use with pedestrian traffic only. Never use Reinforced California Architectural Pedestal Set Pavers to support or construct decks that have wheeled, motorized, or equipment traffic.
6. Pedestrian decks must be restrained by perimeter blocking or walls on all sides. Lateral movement greater than one pedestal tab width is unacceptable and will be rejected.
7. False joint pavers are designed to be used in situations where cutting is required and there is less than 12” that needs to be supported.
8. Installation or anticipated installation of additional items on top of the deck, (such as planters, concrete benches, sculptures, hot tubs, grills, or industrial equipment) must be supported directly by additional pedestals that are in addition to the main deck paver pedestal system. Special consideration must be also given when installing equipment that vibrates. Total weights must be calculated and dispersed evenly over the number of pedestals needed to carry the expected weight. To avoid point loading, the use of planters or architectural features with ‘feet’ is not allowed. Failure to adequately support the additional weight of any such features or items may cause significant damage to the Reinforced California Architectural Pedestal Set Pavers underlying structure, or waterproofing system.

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 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 field cut edges, 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 roof pavers.

END OF SECTION