

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

Dekstone®

Reinforced Precast Concrete

Deck Pavers

*Note to specifier: Reinforced Precast Concrete Deck Pavers are a product line named Dekstone® manufactured by Stepstone, LLC Stepstone is a manufacturer only, not an installer. Stepstone is not responsible for defects that are not related directly to the manufacture of the CalArc Steptreads.*

*The following is provided as a guide to specifying the various applications of Dekstone deck pavers, but does not infer that Stepstone approves materials other than those provided by Stepstone. Installation methods specified herein are provided as a guide only.*

If you need additional information, please call Stepstone, LLC at 800-572-9029 or visit our website at stepstoneprecast.com

July 2024

SECTION 321400

REINFORCED PRECAST CONCRETE DECK PAVERS

PART 1 ‑ GENERAL

1.1 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 reinforced precast concrete deck pavers for pedestrian deck installation.
3. Related Sections: *Note to Specifier: Modify and/or insert appropriate sections.*
4. Section 075000 Membrane Roofing
5. Section 077616 Roof Decking Pavers
6. Section 061700 Structural Wood Framing

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. Paving installations shall be designed in consultation with a qualified engineer, in accordance with established floor framing design procedures.

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.

1. Warranty: Provide certified copies of manufacturer's product warranties.
2. Shop drawings
3. Layout drawings showing layout of paver area, indicate pavers requiring cutting, indicate framing support, and indicate details at perimeter edges and field supports as applicable.

1.4 Mock-Ups:

1. Install a 4 ft x 6 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. Pre-installation Conference: As directed by the Architect
6. 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 deck 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 10 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. Reinforced precast concrete deck pavers shall be 2” thick Dekstone® pavers 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
7. Pavers shall have radius top edge to reduce chipping.

2.3 COLORS AND FINISHES:

1. Colors: Davis Colors (or equal), integral color admixture.

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

|  |  |  |
| --- | --- | --- |
| With Slag  1401 Granada White  1404 French Gray  1405 Iceberg Green  1406 Almond  1407 Cafe Brown  1410 Caramel  1412 Agave  1413 Porcelain  1416 Brick Red  1421 Kona  1424 Pebble  1425 Adobe | Without Slag  1801 Granada White  1804 French Gray  1805 Iceberg Green  1806 Almond  1807 Cafe Brown  1810 Caramel  1812 Agave  1813 Porcelain  1816 Brick Red  1821 Kona  1824 Pebble  1825 Adobe | Slate-Finish (Sonorastone®)  Solid Colors  1501 Granada White  1504 French Gray  1506 Almond  1507 Cafe Brown  1510 Caramel  1512 Agave  1513 Porcelain  1516 Brick Red  1521 Kona  1524 Pebble  1525 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)
2. Slate, also known as Sonorastone®
3. False Joint Paver

*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, including joints, 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 Joint |
| 23-7/8" x 23-7/8" x 2" | X | X | X |  |
| 23-7/8" x 35-7/8" x 2" | X | X | X | X |

1. Unit size: Within 1/8 inch of designated length, width and thickness.
2. Weight - Dekstone Paver: 2” thick: 22 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. Reinforced Precast Concrete Deck Pavers will contain on average 5% entrained air, with no individual piece under 4%.
5. Resistance to Freeze-Thaw: Dekstone Pavers will resist 300 freeze thaw cycles in accordance with ASTM C666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.

2.6 FABRICATION:

1. Reinforced Precast Concrete Deck 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.

2.7 SOURCE QUALITY CONTROL

1. Concrete for Reinforced Precast Concrete Deck 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 and deck dimensions before commencing work.
4. Reinforced Precast Concrete Deck 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 deck pavers require 4” joist spacing set to 23 7/8” centers in the field and 23 7/8” from the outside edge to the center of the next joist for the edge pieces.
3. Cover joists with moisture barrier and lay deck pavers on joists, butted together, starting from one corner, until entire surface is covered. Pavers shall have a minimum of 1 ½” bearing surface on two parallel sides.
4. As an option, deck pavers have ability to be fastened to joists using angle brackets and threaded inserts cast into the bottom of each paver. Usually only the perimeter pavers need to be fastened to contain the field of deck pavers.
5. Decks must be restrained by perimeter blocking or walls on all sides. Lateral movement greater than 1/8” width is unacceptable and will be rejected.
6. 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 support framing that is in addition to the main deck paver system. Special consideration must be also be given when installing equipment that vibrates. Total weights must be calculated and dispersed evenly over the number of pavers 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 Precast Concrete Deck 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 roof pavers from damage due to subsequent building operations.
2. After installation and before completion, inspect precast concrete paving slabs for construction damage and obtain new precast concrete roof pavers if required.
3. Immediately prior to final acceptance of project, clean precast concrete roof pavers.

END OF SECTION