

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

Steptreads



If you need any additional information please call Stepstone, Inc.

at 800-572-9029 or visit our website [www.stepstoneinc.com](file:///E%3A%5C_001%20Sales%20Support%20Documents%5C3%20part%20spec%27s%5C3%20Part%20Specs-Current%5Cwww.stepstoneinc.com)

December 2021

***Note to specifier: Stepstone is the manufacturer of CalArc Steptreads. 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 CalArc Steptreads, but does not infer that Stepstone approves materials other than those provided by Stepstone. Installation methods specified herein are provided as a guide only.***

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PRECAST CONCRETE STAIR TREADS

SECTION 034819

PART 1 ‑ GENERAL

* 1. SUMMARY:
1. Section Includes:

*Note to Specifier: Select one or more as required. Delete risers and landings if not required.*

1. Precast concrete stair treads, **risers and landings**, welded or bolted to supports on steel stairs.
2. Precast concrete stair treads, **risers and landings**, bolted to supports on wood stairs.
3. Related Sections:

*Note to Specifier: Delete and/or Modify - stair type which does not occur.*

1. Section 055100 (05510) Steel Stairs: Stairs and stringers designed, fabricated and installed to meet applicable building codes, including weld plates for field attachment of Steptread welding plates.
2. Section 062000 (06200) Wood Stairs: Stairs and stringers designed, fabricated and installed to meet applicable building codes, including blocking for field attachment of Steptreads.
	1. REFERENCES:
3. American Society for Testing and Materials (ASTM):

ASTM C33 Concrete Aggregates

ASTM C139 Concrete Compressive Strength

ASTM C 144 Aggregate for Masonry Mortar

ASTM C 150 Portland cement

ASTM C595 Standard Specification for Blended Hydraulic Cements

ASTM C 642 Water Absorption, Density, Voids in Hardened Conc

ASTM C 666 Rapid Freeze/Thaw Resistance of Conc

ASTM C 979 Pigments for Integrally Colored Concrete

ASTM C 1028 Coefficient of Friction

* 1. SUBMITTALS:
1. Shop Drawings: Provide setting drawings and templates showing recommended installation of anchorage devices.

*Note to specifier: Delete sentence in bold type if sealer is not to be factory applied. See note hereafter for conditions of sealer application.*

1. Samples: Submit two 3” wide by full depth samples of each type of stair tread unit to show the full range of color and texture of treads and integral detectable warning stripes, for selection and approval. **If sealer is to be applied to stair tread surfaces, apply sealer on one sample**.
2. Manufacturer's Installation Details: Submit complete.
3. Warranty: Provide certified copies of manufacturer's product warranties.
	1. SUBSTITUTIONS:
4. Refer to Section ( ) for procedures. *Note to Specifier: Insert appropriate section.*
5. Proposed substitutions: No known equal.
	1. QUALITY ASSURANCE:
6. Compliance with Regulations: Comply with requirements of state and local building codes and with rules and regulations relating to building accessibility.
7. Qualifications of Manufacturer: Company specializing in manufacture of precast concrete stair treads with a minimum of 10 continuous years of documented experience.
8. Treads and connection shall be capable of supporting dead loads plus a uniform live load of 100 pounds per square foot.
9. Pre-installation Conference: As directed by the Architect
	1. DELIVERY, STORAGE AND HANDLING:
10. 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.

*Note to specifier: Delete risers and landings if not required.*

1. Handle and store stair treads, **risers and landings** in accordance with manufacturer's recommendations. **Do not rest treads on the riser sections.**

1.7 WARRANTY

1. Provide warranty covering precast concrete stair treads, **risers and landings** against defects in material and workmanship for a period of 5 years. Unusual abuse and neglect are excepted.

PART 2 - PRODUCTS

* 1. MANUFACTURER:

Stepstone, Inc.

17025 South Main Street

Gardena, CA 90248

(310) 327-7474

(800) 572-9029

FAX (310) 217-1424

www.stepstoneinc.com

* 1. MATERIALS:
1. Stair treads shall be CalArc "Steptreads", precast concrete, consisting of Portland cement, aggregate, color admixtures, and reinforcing, factory formed to profiles indicated.
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. Reinforcement - Standard 2-1/2 inch Steptreads: Galvanized welded wire mesh, No. 7 and No. 10, 2 inch by 6 inch.
7. Reinforcement - Long Span Steptreads: Galvanized ¼” deformed rebar cage and 3 lengths of ¼” galvanized 3/8” rebar.
8. Tread style:

*Note to Specifier: Select one or more as appropriate. Note that warning stripes are required on top and bottom treads on interior stairs and on all treads on exterior stairs.*

1. Open Riser – available thickness noted by profile:
2. Bullnose profile. *(2-1/2 inch thickness only)*
3. Bullnose profile with integral detectable aggregate warning stripe. *(2-1/2 inch thickness only)*
4. Wedge profile. (2-1/2 inch or 3 inch thickness)
5. Wedge profile with integral detectable aggregate warning stripe. *(2-1/2 inch or 3 inch thickness)*
6. Maximum span for Open Riser Treads is 60”.
7. Closed Riser: *(2-1/2 inch thickness)*
8. Classic profile.
9. Classic profile with integral detectable aggregate warning stripe.
10. Modern profile.
11. Modern profile with integral detectable aggregate warning stripe.
12. Maximum span for Closed Riser Treads is 60”
13. Long-Span Closed Riser: *(3 inch thickness)*
14. Classic profile.
15. Classic profile with integral detectable aggregate warning stripe.
16. Modern profile.
17. Modern profile with integral detectable aggregate warning stripe.
18. Maximum span for Long-Span Closed Riser Treads is 96”.
19. Provide starter nosings with integral detectable warning stripe to match tread style and color.

*Note to specifier: Delete if no landings.*

1. Landings: Of size indicated or required, matching treads in color and texture. Maximum span for Landing Planks is 60”.
	1. COLORS AND FINISHES:
2. Colors: Davis Colors, integral color admixture.

*Note to specifier: Select one or more of the following standard colors. Custom colors are available at additional cost.*

|  |  |  |
| --- | --- | --- |
| Sandblasted With Slag1401 Granada White1404 French Gray1405 Iceberg Green1406 Almond1407 Cafe Brown1410 Caramel1412 Agave 1413 Porcelain1416 Brick Red1421 Kona1424 Pebble1425 Adobe | Sandblasted Without Slag1801 Granada White1804 French Gray1805 Iceberg Green1806 Almond1807 Cafe Brown1810 Caramel1812 Agave 1813 Porcelain1816 Brick Red1821 Kona1824 Pebble1825 Adobe | Broom or Aggregate501 Granada White504 French Gray505 Iceberg Green506 Almond507 Cafe Brown510 Caramel512 Agave 513 Porcelain516 Brick Red521 Kona524 Pebble525 Adobe |

*Note to specifier: Delete "and landings" if landings are not required.*

1. Finishes: Walking surfaces of treads and landings shall have minimum coefficient of friction of 0.60, wet and dry.

*Note to specifier: Select one or more of the following as required.*

1. Broom
2. Exposed Aggregate
3. Sandblasted
4. Hand Troweled

*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.
	1. PHYSICAL PROPERTIES:
5. Compressive strength: Minimum 5,000 psi.
6. Size 12” wide x 2-1/2” thick or (12” wide x 3” thick for Long-Span), length as required for width of stair. *Note to Specifier: Standard widths are from 36” to 48” for 2-1/2” thick treads.* *Standard width for Long-Span treads, 3” thick, is from 49” up to 96”. (Maximum free span of 3” thick open riser treads is not to exceed 60”).*
7. Weight:
8. Open Riser: 30 pounds per square foot at 2-1/2 inches thick; 36 pounds per square foot at 3 inches thick.
9. Closed Riser: 37.2 pounds per lineal foot at 12 inch depth.
10. Long-Span Closed Riser: 48 pounds per lineal foot at 12 inch depth.
11. Landing Units: 30 pounds per square foot at 2-1/2 inches thick; 36 pounds per square foot at 3 inches thick.
12. Water absorption: Not more than 6.0 % average, not more than 7.0 % for any individual unit for standard colors.
13. Unit size: Within 3/16 inch of designated length, width and thickness.
	1. ATTACHMENT ACCESSORIES:
14. For Bolting to Wood stringers:
15. 11 gauge galvanized steel angles, 1-5/8” x 3” x 7-1/4” long.
16. Non-corrosive threaded inserts with 3/8” bolts with flat washer and lock washer.
17. 3” x 3/8” plated lag bolts.
18. 4 gauge galvanized steel starter nosing brackets.
19. For Welding to Steel stringers:
20. 11 gauge galvanized weld plate, 4” x 7-1/4” for 2-1/2” thick Treads.
21. 3/8” galvanized weld plate, 6” x 6” for 3” thick Long-Span Closed and Open Riser Treads.
22. Starter Nosings have a galvanized weld plate/angle (2-1/2” x 2-1/2” x 3/16”)
23. For Bolting to Steel stringers:
24. 11 gauge galvanized steel angles, 1-5/8” x 3” x 7-1/4” long.
25. 4 gauge galvanized steel starter nosing brackets.
26. Non-Corrosive threaded inserts with 3/8” bolts, flat washer and lock washer.
27. Bolting not available on Long-Span Closed and Open Riser Treads.
	1. FABRICATION:
28. Stair treads, risers and landing planks shall be hand-made, wet-cast of cement conforming to ASTM C 150, Type III, and aggregates conforming to ASTM C 33.
29. Reinforcement - Standard 2-1/2” thick Steptreads: Galvanized welded wire mesh, No. 7 and No. 10, 2 inch by 6 inch.
30. Reinforcement - Long Span Steptreads: Galvanized rebar cage.
31. Reinforcement – Landing Planks: Galvanized rebar cage.
	1. SOURCE QUALITY CONTROL:
32. Concrete for Steptreads and risers 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).
33. Minor chips, hairline cracks, air voids and slight variations in color and finish are normal in precast concrete. When viewed in typical daylight illumination form a distance of 20 feet, minor cracks and air voids that cannot be seen with the naked eye are not grounds for rejection.

PART 3 - EXECUTION

* 1. EXAMINATION:
1. Verify that structural components of stairs are in place, aligned and level, within tolerances for proper installation of stair treads and risers, and required structural inspections have been completed.
	1. INSTALLATION - GENERAL:
2. Installation shall comply with requirements of applicable building codes and state and local jurisdictions.
3. Install stair treads aligned, level and with uniform treads and risers throughout the extent of the stair. Where cutting is necessary, use powered masonry saw.

*Note to specifier: Minor chipping of edges and corners is to be expected in handling and installing units. This should not be cause for rejection, unless it is severe.*

1. Do not install stair treads having excessively stained, defaced, or damaged faces, edges, or corners where to remain exposed. Remove dust and dirt from stair tread units using oil-free compressed air.
	1. INSTALLATION: BOLTED TO WOOD STAIR SUPPORTS:
2. Steptreads and risers: Bolt to wood stringers and blocking as indicated on approved submittals, using lag bolts supplied with the Steptreads and risers.
	1. INSTALLATION: WELDED TO STEEL STAIR SUPPORTS:
3. Weld plates on Steptreads shall be welded to structural steel stairs as indicated on approved submittals.
4. Welding shall comply with AWS D1.1, Structural Welding Code.
	1. CLEANING:
5. Clean exposed surfaces of stair treads and risers. Use cleaners appropriate for precast concrete finishes and colors. Acid based cleaners may alter finish and color.
	1. SEALING:
6. 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.
7. 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.

3.7 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