

SECTION 07 76 00 – COMPOSITE ROOF PAVERS

This specification is provided as a courtesy on an as-is basis and is not intended to substitute for specific design services provided by an architect, engineer, roof consultant, or other design professional. It is in the building owner's interest to consult with these professionals prior to executing the specified project. The building owner will ultimately assume the entire risk as to results, quality and performance of the roofing system specified.

EDITOR'S NOTE: Text underlined and/or red in color must be addressed to complete a final specification document. It is the sole responsibility of the editor to exercise appropriate care and sound professional judgment in the execution of this task.

PART 1 – GENERAL

The project, Project Name located in City, ST, includes the provision of Elevate™ SkyPaver™ Composite Roof Pavers installed in conjunction with an approved Elevate membrane roofing system.

1.1 SUMMARY

- A. A Composite Roof Paver System consisting of:
1. Elevate SkyPaver Composite Roof Pavers, 4.0" x 8.0" x 1.23" or 4.0" x 8.0" x 1.98" brick-shaped pavers, color(s) selected by the designer and indicated below, set on a 16" x 16" grid in the pattern(s) indicated below.
 2. Elevate SkyPaver Accessory Pavers, color(s) selected by the designer and indicated below, including any of the following selected by the designer and indicated below, set within the system on a 16"x6" grid:
 - i. Bullnose Paver, 4" x8" x 1.23"
 - ii. Transition Paver, 8" x 7.1" x1.23"
 - iii. Half Paver, 4" x4" x 1.98"
 - iv. 8" x 8" Paver, 8" x 8" x 1.98"
 - v. Soldier Course Paver, 4" x 8" x 1.98"
 - vi. Wedge Paver, 4" x 8" x 1.98"
 3. Elevate SkyDrain™ Sheet, with drainage cups and attached filter layer, must be installed under the composite paver assembly.
- B. Single source manufacturer will provide all materials and resources to plan, install, support, and maintain a composite roof paver system.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM).
- B. Canadian Standards Association (CSA).
- C. Underwriters Laboratories (UL).

1.3 GENERAL CONDITIONS

- A. As specified in Section_____.

1.4 RELATED SECTIONS

A. Choose One:

A. Section 07 53 23 – Ethylene-Propylene-Diene-Monomer (EPDM) Membrane Roofing: Single ply elastomeric roofing system.

or

A. Section 07 54 23 –Thermoplastic Polyolefin (TPO) Membrane Roofing: Single ply elastomeric roofing system.

or

A. Section 07 52 16 –Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing: multi-ply bituminous membrane roofing.

B. Section 07 71 00 - Roof Specialties: Manufactured copings, fascias, gravel stops, and other flashing-related items.

1.5 SUBMITTALS

A. Product Data: Include manufacturer's Technical Information Sheet.

B. Shop Drawings: Include Setting Drawings showing layouts, sizes, sections, profiles, and any other applicable details for Elevate SkyPaver and SkyDrain.

C. Samples – For the following products:

1. Elevate SkyPaver, one brick of each selected color, 4.0" x 8.0" x 1.23" or 4.0" x 8.0" x 1.98", set on a 16" x 16" grid.

2. SkyPaver Accessory Pavers, one each of any of the following as selected by the designer and in each of the colors selected:

- i. Bullnose Paver, 4" x 8" x 1.23"
- ii. Transition Paver, 8" x 7.1" x 1.23"
- iii. Half Paver, 4" x 4" x 1.98"
- iv. 8" x 8" Paver, 8" x 8" x 1.98"
- v. Soldier Course Paver, 4" x 8" x 1.98"
- vi. Wedge Paver, 4" x 8" x 1.98"

3. Elevate SkyDrain, 6" x 6" sample, with drainage cups and attached filter layer.

D. Installer License: Letter from manufacturer stating that installer is licensed to perform a warrantable installation.

E. Manufacturer's Instructions: Include manufacturer's installation instructions, noting any special procedures and/or conditions requiring special attention.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Qualified installers must be licensed by Elevate roofing, wall, and lining systems for the warranted installation of Elevate roofing systems.

B. Provide Elevate SkyPaver and SkyDrain products that are free of cracks, seams, and defects impairing appearance, structural integrity, or function.

C. Contractor shall conform to all local, state licensing and bonding requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in original packages.
- B. Store materials in a clean, dry location.

1.8 FIELD CONDITIONS

- A. Roofing system installation must be complete at area where SkyPaver Composite Pavers are to be installed.

1.9 WARRANTY

- A. Elevate SkyPaver Composite Pavers are included as roofing accessories covered by a Elevate Red Shield™ Warranty.

PART 2 - PRODUCTS

2.1 SkyPaver Composite Roof Paver System

- A. Supplied by: Elevate roofing, wall, and lining systems, www.holcimelevate.com.
- B. SkyPaver Composite Roof Pavers,
 - 1. Color(s): [Chestnut](#), [Sage](#), [Ruby](#), [Ash](#), [Lavender](#).
 - 2. Dimensions, and thickness: [4.0" x 8.0" x 1.23"](#) or [4.0" x 8.0" x 1.98"](#), eight (8) pavers per installation 16.0" x 16.0" x 1.0" grid. Dimensions are based on manufacturer's standard drawings.
- C. Composite Roof Pavers must meet the following required technical specifications:
 - 1. Weight: 1.23" thick pavers: 11.2lbs per One Unit (8 pavers set in one grid); 1.98" thick pavers: 16.1lbs per One Unit (8 pavers set in one grid).
 - 2. Coverage: 1.78ft² per One Unit (8 pavers set in one grid).
 - 3. Water Absorption: <1% when tested in accordance with ASTM C-140, or CSA A231.1 – 99.
 - 4. Recycled Content: up to 95% postconsumer recycled content.
 - 5. Compressive Strength (2.0" thickness only): >2000psi, per ASTM C140-09 Section 7.
 - 6. Flexural Strength (2.0" thickness only): Ultimate Flexural Strength 695psi, Flexural Modulus 3842psi, per ASTM C140-09 Annex A6.
 - 7. Coefficient of Friction: Dry (static) 0.99, Wet (static) 0.67; per ASTM C1028-07 (Neolite pad). Dry (static) 0.57 / (sliding) 0.46, Wet (static) 0.94 / (sliding) 0.86) per ASTM D2394-05e1.
 - 8. Coefficient of Thermal Expansion: 44*10⁽⁻⁶⁾ at 68°F.
 - 9. Flame Spread, Intermittent Flame, Burning Brand: ASTM E108-007 (tested at ½":12" slope), Class "C"; meets UL94 Section 7 (horizontal burn rate less than 0.1" per second).
 - 10. Chemical Resistance: No visual discoloration after 30-day exposure to household bleach or muriatic acid. No known discoloration due to

exposure to road/deicing salt (sodium chloride or magnesium chloride), engine oil, grease, or common household cleansers.

11. Cold Water Absorption: PASS <1% by mass, average saturation coefficient (after 1 hour boil): 0.05, per ASTM C67 Section 8.
12. Freeze-Thaw Cycling: PASS freeze-thaw cycled 52 times over 75 days; no visual signs of cracking, warping, or crazing; per ASTM C67 Section 9.

D. SkyPaver Accessory Pavers

1. Bullnose Paver, 4" x 8" x 1.23"
 - a. Used to finish system edges
 - b. Colors available: Ruby, Chestnut, Ash
2. Transition Paver, 8" x 7.1" x 1.23"
 - a. Used to finish system edges
 - b. Colors available: Ruby, Chestnut, Sage, Ash, Lavender
3. Half Paver, 4" x 4" x 1.98"
 - a. Used to create patterns
 - b. Colors available: Ruby, Chestnut, Sage, Ash, Lavender
4. 8" x 8" Paver, 8" x 8" x 1.98"
 - a. Used to create patterns
 - b. Colors available: Ruby, Chestnut, Sage, Ash, Lavender
5. Soldier Course Paver, 4" x 8" x 1.98"
 - a. Used to create curved designs
 - b. Colors available: Ruby, Ash
6. Wedge Paver, 4" x 8" x 1.98"
 - a. Used to create curved designs
 - b. Colors available: Ruby, Ash
7. Accessory pavers must meet the following criteria:
 - a. Water Absorption <1%
 - b. Thermal Expansion 44×10^{-6} @ 68 °F
 - c. Compressive Strength >2,000 psi
 - d. Usable with chairs, high heels, heavy carts, etc.
 - e. Injection Molded, not Compression Molded
 - f. Dry and Wet Slip Resistance Meets:
 - 1) ASTM C 1028-07
 - a) Dry (static) 0.00
 - b) Wet (static) 0.67
 - 2) ASTM D 2394-05e
 - a) Dry (static) 0.57, (sliding) 0.46
 - b) Wet (static) 0.94, (sliding) 0.86
 - g. Colorant all the way through the product
 - h. Meets ASTM G155-05 Xenon Arc Testing

E. SkyDrain Sheet

1. Thickness: ½".
2. Protection Fabric: woven monofilament fabric, bonded to drainage cups.
3. Drainage Cups: prefabricated from a formed polystyrene core.

4. Roll Size: 4.0' x 50.0'.
5. Maximum Flow Capacity: 16gpm.
6. Aeration Layer Thickness: ½" (13mm).
7. Water Storage: 0.06 g/ft².
8. Protection Fabric: needle-punched, non-woven.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance.
- B. Verify that the roof membrane installation is completed.
- C. Verify that all identified defects in the roof membrane have been repaired to the satisfaction of the roof membrane manufacturer prior to installation of SkyPaver Composite Pavers.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

- A. All substrates must be clean, dry, smooth, free of sharp edges, fins, loose or foreign materials, oil, grease, and other materials which may damage the roofing membrane, prior to installation.

3.3 INSTALLATION

- A. Unroll the Elevate SkyDrain Sheet so that the bottom of the drainage cups contact the roofing membrane, and so that the length of the SkyDrain Sheet runs with the slope of the roof toward the drains. SkyDrain Sheet sections should be butted together.
- B. Cut the SkyDrain Sheet to fit the area to be covered by SkyPaver Composite Pavers, and around any protrusions (a box cutter may be used).
- C. Begin laying grids starting from one corner. Leave a 2" gap from all walls and other vertical surfaces to allow for thermal expansion and contraction. Lay out at least 10 grids to allow for sufficient room to work. Offset seams of the grids with seams of the SkyDrain Sheet for best results.
- D. Grids can be cut to fit using a miter saw or jigsaw. If the ending grid is less than 4", cut off 4" or 8" of the grid before it, so the ending grids can be longer and will connect with overlapping pavers.
- E. Bring stacks of pavers to the starting point. Empty pavers off of the grid.
- F. Lay pavers using chosen pattern (herringbone, basket weave, running bond), mixing different colors if desired. Pavers must connect grids in both directions by one paver laying on two grids. Continue laying out grids and pavers until all full pavers are installed
- G. Field cutting of pavers: Use a miter saw or jigsaw. Install cut pavers last.
- H. Adhering Pavers to Grid:

- a. All Bullnose, Transition, Soldier Course, and Wedge Pavers must be adhered to the SkyPaver grid.
- b. Pavers should also be adhered in order to mitigate wind uplift in high wind locations, or in high traffic conditions.
- c. Adhesive should be used whenever pavers have been cut.
- d. Use a heavy-duty, solvent based advanced polymer adhesive, or a water-based adhesive designed for landscaping. Place a 1/8" bead across the top ribs of the grid, set the paver in place and press firmly, leaving the paver in place for the duration of the adhesive cure time.

3.4 PROTECTION AND CLEANING

- A. Do not permit foot or vehicular traffic on unprotected membrane or on adhered pavers during adhesive cure time.
- B. Protect roofing membrane from damage and wear during the remainder of the construction period.
- C. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by the manufacturer of the affected construction.
- D. Do not sweep sand into paver joints.

END OF SECTION