SECTION 07 76 16

ROOF PAVERS AND PEDESTALS

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\*\* NOTE TO SPECIFIER \*\* Archatrak Inc.; Pavers and Deck Support Systems.
This section is based on the products of Archatrak Inc., which is located at:1001 W Oak St., Suite 101Bozeman, MT 59715Toll Free Tel: 866-206-8316Email: [request info (tileinfo@archatrak.com)](https://arcat.com/rfi?action=email&company=Archatrak%252BInc.&message=RE%253A%2520Spec%2520Question%2520(07760atk)%253A%2520&coid=51446&spec=07760atk&rep=&fax=)
Web: <https://www.archatrak.com>
 [ [Click Here](https://arcat.com/company/archatrak-inc-51446) ] for additional information.
Archatrak is a national supplier of exterior porcelain pavers, structural and interlocking wood deck tiles, deck support systems and site furniture. For the past two decades we have played a leading role in the introduction and market development of both interlocking deck tiles and structural porcelain pavers for creating exceptional outdoor environments.
Whether it's elevated rooftop decks on pedestals, on-grade paving over sand or gravel, resurfacing of existing concrete, or mortar set paving for vehicular applications, we supply the means to create outdoor spaces with unique character and lasting appeal, both residential and commercial.
\*\* NOTE TO SPECIFIER \*\* Delete options not required.

1. GENERAL
	1. SECTION INCLUDES:

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Porcelain roof pavers.
		2. Ipe wood roof deck pavers.
		3. Pedestal supports and pads for roof pavers.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Division 07 waterproofing section for protection mats for waterproofing membrane at pedestal support locations.
		2. Division 07 roofing section for protection mats for roof membrane and insulation cover boards at pedestal support locations.
		3. Section 07 62 00 - Sheet Metal Flashing and Trim0 - Sheet Metal Flashing and Trim. For sheet metal flashing, edge closure, and roof drainage items.
		4. Section - 3 - Vegetated Roof Systems. For vegetated roof assemblies.
		5. Section - 3 - Roof Ballast Pavers. For precast concrete roof ballast pavers.
		6. Section - 3 - Ceramic Tiling. For ceramic floor and wall tile.
		7. Section - 9 - Facility Fall Protection. For roof-mounted fall protection equipment.
		8. Section - 0 - Site Furnishings. For roof-mounted unit planters.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American Society of Civil Engineers (ASCE) Structural Engineering Institute (SEI):
			1. ASCE/SEI 7 - Minimum Design Loads for Buildings and Other Structures.
		2. ASTM International (ASTM):
			1. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings.
			2. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete samples paragraphs if not applicable to product type.

* + 1. Samples for Initial Selection: For each product specified when selection is specified. Provide representative charts of manufacturer's full range of patterns and colors.
		2. Verification Samples: Two representative units of each type, size, pattern, and color.
		3. Shop Drawings: Provide shop drawings. Include full plans showing roof paver and roof paver supports layout, adjacent construction and penetrations, and details of each condition of installation and attachment.
			1. Include data indicating compliance with performance requirements.
			2. Indicate points of supporting structure and other construction elements that must coordinate with roof paver installation.

\*\* NOTE TO SPECIFIER \*\* Edit below to comply with Project requirements for LEED or other sustainable design requirements. Delete if not required.

* + 1. Sustainable Design Submittals:
			1. Product data indicating the following:
			2. Percentages by weight of post-consumer and pre-consumer recycled content.
			3. Total weight of products provided.
			4. Product Test Reports: For roof materials, documentation indicating that roof materials comply with Solar Reflectance Index requirements.
	1. INFORMATIONAL SUBMITTALS
		1. Installer qualifications.
		2. Product Test Reports: Indicating compliance of products with performance requirements, from a qualified independent testing agency.
		3. Manufacturer's Warranty: Submit sample warranty.
	2. CLOSEOUT SUBMITTALS
		1. Maintenance data.
		2. Executed warranty.
	3. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum of five years documented experience.
		2. Installer Qualifications: Experienced Installer with record of successful in-service performance of similar installations and approved in writing by roof paver manufacturer.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.

\*\* NOTE TO SPECIFIER \*\* Add to or delete from the following paragraphs as required.

* + - 1. The intent of a mock-up is to demonstrate quality of workmanship and visual appearance.
			2. Build mockup in size and location indicated on Drawings, or if not indicated, not less than eight roof pavers and roof paver supports plus edge condition.
				1. Demonstrate methods and details of installation.
			3. If the mock-up is not acceptable, rebuild the mock-up until satisfactory results are achieved.
			4. Approval of mockup does not relieve Contractor of responsibility to comply with all requirements of contract documents.
			5. Retain mock-up during construction as a standard for comparison with completed work.
			6. Approved mockup may become part of installation if approved by Architect.
			7. Do not alter or remove mock-up until work is completed or removal is authorized.
	1. PRE-INSTALLATION CONFERENCE
		1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
			1. Coordinate roof substrate protection installation, roof drain locations, and other elements affecting roof pavers.
			2. Verify compatibility of roofing system installation with load-bearing requirements of roof paver supports.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. ATTIC STOCK
		1. Furnish extra materials matching installed products, packaged with protective covering, with labels indicating contents.
			1. Roof Pavers: Furnish full size units in quantity equal to 3 percent of number of units installed, for each type, pattern, color, and size.
			2. Roof Paver Supports: Furnish units in quantity equal to 3 percent of number of units installed, for each type and size. Include manufacturer-furnished adjustment tool.
	5. WARRANTY
		1. Manufacturer's standard limited warranty unless indicated otherwise.
			1. Manufacturer's standard form, in which Manufacturer and Installer jointly agree to replace roof pavers and roof paver supports that fail in materials or workmanship within three years of substantial completion.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Archatrak Inc., which is located at:1001 W Oak St., Suite 101Bozeman, MT 59715Toll Free Tel: 866-206-8316Email: [request info (tileinfo@archatrak.com)](https://arcat.com/rfi?action=email&company=Archatrak%252BInc.&message=RE%253A%2520Spec%2520Question%2520(07760atk)%253A%2520&coid=51446&spec=07760atk&rep=&fax=);Web: <https://www.archatrak.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with the provisions of Section 01 60 00.
	1. PERFORMANCE AND DESIGN REQUIREMENTS
		1. Delegated Design: Engage a qualified professional engineer to design roof paver installation.

\*\* NOTE TO SPECIFIER \*\* Keep "Structural Performance" Paragraph below and "Delegated Design" Paragraph above when Contractor is required to take responsibility for structural design of installation. Edit to correspond to requirements of authorities having jurisdiction.

* + 1. Structural Performance: Roof paver system shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
			1. Floors: Uniform load of 125 psf (5985 N per sq m) or concentrated load of 2000 lbf, whichever produces the greater stress.
			2. Walkways and Elevated Platforms Other Than Exits: Uniform load of 60 psf (28723 N per sq m).
			3. Walkways and Elevated Platforms Used as Exits: Uniform load of 100 psf (4788 N per sq m).

\*\* NOTE TO SPECIFIER \*\* Delete the Following paragraph if uplift pressures are not indicated on the Drawings/.

* + - 1. All Roof Zones (Corner, Perimeter, and Field-of-Roof) Uplift Pressures: As indicated on Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete the following three paragraphs if uplift pressures are indicated on the Drawings. Otherwise, fill in the blanks.

* + - 1. Roof Zone 1 (Field-of-Roof) Uplift Pressure: \_\_\_ psf (\_\_\_ N per sq m).
			2. Roof Zone 2 (Perimeter) Uplift Pressure: \_\_\_ psf (\_\_\_ N per sq m), located within \_\_\_\_ ft (\_\_\_ m) of roof perimeter.
			3. Roof Zone 3 (Corners) Uplift Pressure: \_\_\_ psf (\_\_\_ N per sq m), located within \_\_\_\_ ft (\_\_\_ m) of roof outside corner.

\*\* NOTE TO SPECIFIER \*\* Retain "Solar Reflectance Index" Paragraph below if "cool-roof" performance is required; edit to suit Project. Verify availability of products meeting requirements.

* + 1. Solar Reflectance Index (SRI) Calculated According to ASTM E 1980: 78 minimum
		2. Combustion Characteristics: Roof paver system shall meet Class A flame spread requirements of ASTM E 108 when tested by a qualified independent testing laboratory acceptable to authorities having jurisdiction.
		3. Paver Systems: For pedestrian traffic only. All sides of a deck are to restrain and contain the pavers with perimeter blocking or walls. Pavers must be incapable of no more than 1/8 inch (3 mm) lateral movement
		4. Membrane Waterproofing and Protection Board Surfaces Receiving Pedestals: To be broom clean, frost free, dirt free, oil free, with no rough foreign matter present, which may compromise the waterproofing / roofing manufacturers guarantee or protection requirements.
		5. Substrates Receiving Pedestals: To be sloped, providing adequate drainage in accordance with applicable building codes.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph if not required.

* + 1. Decks Over Roofing and Waterproofing:
			1. Where high density closed cell extruded 60 psi (414 kPa) load capacity polystyrene insulation is installed on top of the membrane in a protected membrane system, pedestals may be installed directly on top of the insulation.
			2. Do not use pedestals over any insulation less than 60 psi (414 kPa) load capacity or with low density polystyrene (bead board) insulation.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph if not required.

* + 1. Decks on Grade:
			1. Substrate Soil Receiving Pedestals: Adequately compacted with positive drainage slope. A base of 1/4 inch (6 mm) shall be installed and compacted at pedestal locations.
			2. Wall or perimeter containment on open sides is required. Install structural perimeter containment that restrains the entire decking system.
		2. Installation of Items on the Deck Pavers; Planters, Hot Tubs, Sculptures, or Industrial Equipment: To be supported by additional pedestals in addition to the main deck paver pedestal system. Failure to support the additional weight may cause significant damage to the deck, underlying structure, or waterproofing.

\*\* NOTE TO SPECIFIER \*\* Delete article not required or delete type paragraph not required.

* 1. ROOF PAVERS
		1. Structural Porcelain Pavers: Porcelain pavers, abrasion, freeze/thaw, chemical, and stain-resistant, intended for exterior use on specified paver supports.

\*\* NOTE TO SPECIFIER \*\* Delete basis of design options not required.

* + - 1. Basis of Design: T20 Porcelain Paver as manufactured by Archatrak Inc.
				1. Thickness: 3/4 inch (19 mm), nominal.
				2. Weight: 9 lbs per sq. ft. (43.94 kg per sq m).
				3. Breaking strength ISO 10545-4: Greater than 2200 lbf (10,000 N).
				4. Modulus of rupture ISO 10545-4: Greater than 7000 psi (48,000 kPa).
			2. Basis of Design: T30 Porcelain Paver as manufactured by Archatrak Inc.
				1. Thickness: 1-1/8 inch (28 mm), nominal.
				2. Weight: 13.5 lbs per sq. ft. (65.91 kg per sq m).
				3. Breaking strength ISO 10545-4: Greater than 6,500 lbf (25,000 N).
				4. Modulus of rupture ISO 10545-4: Greater than 7,000 psi (48,000 kPa).
			3. Basis of Design: T50 Porcelain Paver as manufactured by Archatrak Inc.
				1. Thickness: 2 inch (51 mm), nominal.
				2. Weight: 23.4 lbs per sq. ft. (114.25 kg per sq m).
				3. Water absorption ISO10545-3: Less than 0.1 percent.
				4. Breaking strength ISO 10545-4: Greater than 15,000 lbf (67,000 N).
				5. Modulus of rupture ISO 10545-4: Greater than 7,000 psi (48,000 kPa).

\*\* NOTE TO SPECIFIER \*\* The remaining paragraphs are common to each basis of design listed above. Delete color, pattern, and size options not required.

* + - * 1. Water absorption ISO10545-3: Less than 0.1 percent.
				2. Impact resistance, ISO 10545-5: Greater than 0.55.
				3. Resistance to abrasion, ISO 10545-6: Conforms.
				4. Frost resistant, ISO 10545-12: Resistant.
				5. Resistance to thermal shock, ISO 10545-9: Resistant.
				6. Resistance to chemicals, ISO 10545-13: UA.
				7. Resistance to acids & alkalis, ISO 10545-13: ULA / UHA.
				8. Resistance to staining, ISO 10545-14: Class 5.
				9. Fire resistance, EN3501-1: A1-A1 FL.
				10. Barefoot ramp test, DIN 51097: A+B+C.
				11. Shod ramp test, DIN 51130: R11.
				12. Static coefficient of friction, ASTM C1028-2007:

Wet: Greater than 0.6.

Dry: Greater than 0.6.

* + - * 1. Color: \_\_\_\_\_\_\_\_.
				2. Color: As selected by Architect.
				3. Color: As indicated on the Drawings.
				4. Pattern: \_\_\_\_\_\_\_\_.
				5. Pattern: As selected by Architect.
				6. Pattern: As indicated on the Drawings.
				7. Size, Nominal: 8 x 48 inches (203 x 1219 mm).
				8. Size, Nominal: 12 x 48 inches (305 x 1219 mm).
				9. Size, Nominal: 16 x 48 inches (406 x 1219 mm).
				10. Size, Nominal: 18 x 36 inches (457 x 914 mm).
				11. Size, Nominal: 24 x 24 inches (610 x 610 mm).
				12. Size, Nominal: 24 x 48 inches (610 x 1219 mm).
				13. Size, Nominal: 30 x 30 inches (762 x 762 mm).
				14. Size, Nominal: \_\_ x \_\_ inches (\_\_\_ x \_\_\_ mm).
				15. Size: As selected by Architect.
				16. Size: As indicated on the Drawings.
		1. Ipe Wood Deck Pavers: Wood Deck Tiles constructed from Ipe wood face slats, at least 13/16 inch thick, and secured to wood battens with stainless steel screws, intended for exterior use on specified paver supports.
			1. Basis of Design: Ipe Wood Deck Tiles as manufactured by Archatrak Inc.

\*\* NOTE TO SPECIFIER \*\* Delete FSC Certified is not required. Delete size option not required.

* + - * 1. FSC Certified.
				2. Size: 24 x 24 inches (606 x 606 mm) nominal.
				3. Size: 24 x 48 inches (606 x 1212 mm) nominal.
				4. Surface Finish: Smooth finish, not coated with any wood preservative.
				5. Overall Paver Height: 1-5/8 inches (42 mm) nominal.
				6. Weight: 5.75 lb per sq ft (2.59 kg/0.09 sq m) minimum.
				7. Wood Hardness: 1,700 lb (771 kg), Janka Scale Rating.
				8. Concentrated Load: 3,150 lb (1,429 kg) maximum, at center of paver.
	1. PAVER SUPPORTS

\*\* NOTE TO SPECIFIER \*\* Delete supports paragraph options not required.

* + 1. Adjustable Height Pedestal Supports: Continuously variable adjustable height.
			1. Basis of Design Product: Archatrak Eterno Prime Adjustable Paver Supports.
			2. Material: High-density copolymer polypropylene.
			3. Supports: Screw-jack-type.
			4. Height Adjustment Rage: 1-1/8 to 21-3/4 inches (29 to 552 mm).
			5. Slope Substrate Compensation: Up to five percent,
			6. Top: Cushioned SBR rubber top fitting providing support for specified pavers.
			7. Adjustable Fittings: As required to provide level paver installation as indicated.
			8. Load Capacity: 2,000 lbs (907 kg).
			9. Paver Spacer Tabs: 5/32 inch (4 mm).
			10. Shims: Support Manufacturer's standard.
		2. Non-Combustible Adjustable Height Steel Pedestal Supports: Continuously variable adjustable height.
			1. Basis of Design Product: Archatrak FR Non-Combustible Adjustable Paver Supports.
			2. Material: Corrosion resistant mild steel.
			3. Supports: Screw-jack-type.
			4. Height Adjustment Rage: 1 inch to 20 inches (26 to 490 mm).
			5. Slope Substrate Compensation: Up to five percent,
			6. Top: Plastic cap with paver spacer tabs for specified pavers.
			7. Adjustable Fittings: As required to provide level paver installation as indicated.
			8. Load Capacity: 21,000 lbs (93 kN).
			9. Paver Spacer Tabs: 5/32 inch (4 mm).
		3. Fixed Height Pad Supports: SBR rubber cushioning pads of varying thickness with shims and spacers., accommodating height adjustments from 3/8 inch to 1-1/2 inch, with top fitting providing support for specified pavers.
			1. Basis of Design Product: Archatrak Fixed Height Rubber Support Pads.
			2. Height Adjustment Rage: 3/8 to 1-1/2 inches. (9.5 to 38 mm)
			3. Load Capacity: Not less than 1,500 lbs (680 kg).
			4. Paver Spacer Tabs: 5/32 inch (4 mm).
			5. Shims: Support Manufacturer's standard.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until the substrates have been properly constructed and prepared.
			1. Examine substrates and conditions, with Installer present, for compliance with manufacturer's requirements for installation tolerances and other conditions affecting performance of the Work.
		2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
			1. Proceed with installation only after unsatisfactory conditions have been corrected.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
		3. Coordinate placement of protection sheet at roof paver supports with work of roofing section.
		4. Lay out roof paver and roof paver support locations and mark for application of protection sheet.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
		2. Roof Paver Supports:
			1. General: Set roof paver supports in locations coordinated with approved roof paver layout. Install in accordance with support manufacturer's written instructions and approved submittals. Adjust roof paver support heights prior to, and following, installation of roof pavers. Shim where fine adjustment is necessary using manufacturer-provided shims.
			2. Tolerances for Roof Paver Supports:
				1. Maximum of 1/16 inch height variation between adjacent roof pavers.
				2. Individual roof pavers shall not vary more than 1/16 inch from level across width of the paver.
				3. Paved areas shall not vary more than 1/4 inch from level in a distance of 10 feet measured at any location and in any direction.
		3. Pavers:
			1. Install roof pavers according to manufacturer's written instructions and approved shop drawings. Set in place using placement methods that result in stable installation free from rocking using sound roof pavers with no edge or surface damage. Make final in-place height adjustments using manufacturer's furnished tool.
	4. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

\*\* NOTE TO SPECIFIER \*\* Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, or construction. Delete if not required.

* + 1. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.
	1. CLEANING AND PROTECTION
		1. Remove and replace loose, chipped, broken, stained or otherwise damaged roof pavers, or if roof pavers do not match adjoining units or pattern indicated on Drawings.
		2. Cleaning: Remove soiling from exposed roof paver surfaces, wash, and scrub clean. Leave joints between roof pavers open and clean of debris to allow for proper drainage and air flow.
		3. Provide final protection and maintain roof pavers without damage or deterioration at time of substantial completion.

END OF SECTION