

SECTION 07310 – SLATE SHINGLE ROOFING SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A Slate roofing system.
- B Leak barrier and roof deck protection.
- C Metal flashing associated with slate roofing system.
- D Attic Ventilation

1.02 RELATED SECTIONS

- A Section 06100 - Rough Carpentry: Framing, wood decking, and roof sheathing.
- B Section 07620 - Flashing and Sheet Metal: Sheet metal flashing not associated with shingle roofing; gutters and downspouts.
- C Section 07720 – Roof Accessories

1.03 SUBMITTALS

- A Submit copies of Slate-Tec product data sheets, detail drawings and samples for each type of roofing product.

1.04 QUALITY ASSURANCE

- A Manufacturer Qualifications: Provide all primary roofing products, including the slate system roof deck protection, underlayment, leak barrier, and ventilation, by a single manufacturer.
- B Installer Qualifications:
 - 1. Installer must be approved for installation of all roofing products to be installed under this section.
 - 2. Installer must be a part of one of the Slate-Tec Certified Contractor programs or Authorized Installers.

1.05 REGULATORY REQUIREMENTS

- A Provide a roofing system achieving an Underwriters Laboratories (UL) Class A fire classification.
- B Install all roofing products in accordance with all federal, state and local building codes.
- C All work shall be performed in a manner consistent with current OSHA guidelines.

1.06 PREINSTALLATION MEETING

- A General: A pre-installation meeting is required.
- B Timing: The meeting shall take place at the start of the roofing installation.
- C Attendees: Meeting to be called for by manufacturer's certified contractor. Meeting's mandatory attendees shall include the certified contractor and the manufacturer's representative. Non-mandatory attendees shall include the owner's representative, architect or engineer's representative, and the general contractor's representative.
- D Topics: Certified contractor and manufacturer's representative shall review all pertinent requirements for the project, including but not limited to, scheduling, weather considerations, project duration, and requirements for the specified warranty.

1.07 DELIVERY, STORAGE, AND HANDLING

- A Store all products in manufacturer's unopened, labeled packaging until they are ready for installation. Slates should remain in their crates until ready for installation
- B Store products in a covered, ventilated area, at temperature not more than 110° F (43° C); do not store near steam pipes, radiators, or in direct sunlight.
- C Store crates on a flat surface. Maximum stacking height shall not exceed Slate-Tek recommendations. Store all rolls (Moisture Barrier, leak barrier, or roof deck protection products) on end.
- D Store and dispose of solvent-based materials in accordance with all federal, state and local regulations.

1.08 WEATHER CONDITIONS

- A Proceed with work only when existing and forecasted weather conditions will

permit work to be performed in accordance with Slate-Tec recommendations

1.09 WARRANTY

A Provide to the owner a Warranty.

PART 2 PRODUCTS

2.01 Manufacturers

A Acceptable Manufacturers:

1. Slate-Tec Inc. PO Box 2015

Wheatridge, CO. 80034 Tel: 855-752-8383

www.slatetec.net

B Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.02 SLATE System

A Dense, tough, durable, natural rock or stone sorted to eliminate any that have been cracked or broken, having a porosity of approximately 0.15 to 0.40 percent making this material practically nonabsorbent. 1/4" to 3/8" thick, 12 inch by 12 inch size with an 8 inch (254 mm) exposure. Meets FM 4473 tests for Hail Impact; TAS 100 A for Wind and Rain.

Color: Spanish Black

B High density polyethylene (HDPE) Interlayment (07315-4) protects against UV, moisture and weather infiltration.

2.03 HIP AND RIDGE SLATES

A Dense, tough, durable, quarried slate approximately 12" x 7". For 8" exposure.

B Cedar 1" x 3" pieces used as a fastening base for installing Trim Slates at hip & ridge areas.

2.04 LEAK BARRIER

A Self-adhering, flexible SBS-modified compound and reinforced with a specially

formulated reinforced polyester mat. Flexible design conforms to irregular surfaces.

2.05 ROOF DECK PROTECTION

- A Premium, water repellant, breathable type non-asphaltic underlayment. UV stabilized polypropylene construction. Meets or exceed ASTM D226 and D4869. Approved by Miami- Dade Country, Florida Building Code, and has ICC Report ESR-2808 Approval.
- B Non-Asphaltic water and fire resistant underlayment. Meets or exceeds ASTM D226, ASTM D4869 and ASTM D6757 type I & II. Approved by Underwriters Laboratory, Miami -Dade County, Florida building Code and ICC report ESR-2053.

2.06 RIDGE VENTILATION SYSTEM

- A Rigid plastic ridge ventilator designed to allow the passage of hot air out of attics. Includes filter to help prevent weather infiltration. For use in conjunction with eave/ soffit intake ventilation products.

2.07 ROOFING CEMENT

- A General purpose asphalt roofing cement meeting the requirements of ASTM D 4586, Type I or II.

2.08 NAILS & Fasteners

- A 2 ½" (64 mm) copper slating nails
- B 2 ½" (64 mm) #8 coated decking screws
- C 2" (64 mm) copper slating nails (when not using ridge ventilation)
- D 2" (64 mm) #8 coated decking screws (when not using ridge ventilation)
- E 1 ½" (38 mm) roofing nails (fastening Hip & Ridge Spacer)
- F 1 ¼" (64 mm) copper slating nails (fastening copper flashings).

2.09 METAL FLASHING

- A 16-oz/sq ft (0.66 mm) copper sheet, complying with ASTM B 370
- B 26 gauge stainless steel
- C 4 lb. (1.81kg) [.062 inch (1,75mm)] thick lead

PART 3 EXECUTION

3.01 EXAMINATION

- A Do not begin installation until the roof deck has been properly prepared.
- B If roof deck preparation is the responsibility of another installer, notify the architect or building owner of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A Verify that the deck is dry, sound, clean and smooth. It shall be free of any depressions, waves, and projections. Cover with sheet metal, all holes over 1 inch (25 mm) in diameter, cracks over 1/2 inch (12 mm) in width, loose knots and excessively resinous areas.
- B Replace damaged deck with new materials.
- C Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment.

3.03 PREPARATION

- A Roof deck should be a minimum 5/8" (10 mm) APA-The Engineered Wood Association rated exterior grade fire retardant treated plywood.
- B Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment.
- C At areas that receive eaves protection membrane, fill knotholes and cracks with latex filler.
- D Install ¼" Densdeck roof deck over fire retardant treated plywood.

3.04 UNDERLAYMENT APPLICATION

- A General:

1. Install using methods recommended by manufacturer, in accordance with local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
- B Leak Barrier:**
1. Install a full deck of leak barrier protection on roofs with a minimum slope of 4/12 up to and including 5/12. Install leak barrier at all vulnerable areas on roof slopes greater than 5/12.
- C Eaves:**
1. Install approved eave edge metal flashing tight with fascia boards; lap joints 2 inches (50 mm) and seal with plastic cement; nail at the top of the flange.
 2. Install leak barrier membrane up the slope over the approved drip edge metal up to ¼" (6mm).
 3. Install eave protection membrane at least 24 inches (610 mm) beyond the interior "warm wall". Lap ends 6 inches (150 mm) and bond.
 4. For roof slopes greater than 5/12, apply self adhering underlayment over the deck extending from the eave edge to a point at least 24" beyond the inside wall of the living space below to meet ASTM D1970 standard.
- D Valleys – Metal**
1. Install eaves protection membrane at least 36 inches (914mm) wide and centered on the valley. Overlap all side laps with minimum 6 inches (150 mm) and head lap with minimum 2 inches seal.
 2. Install approved valley metal "no hem" on top valley underlayment. Nail 1" (25mm) from edge of metal 16" (406mm) on center.
 3. Install 10" (254mm) wide strips of self-adhering membrane over valley metal edges 3" (76mm) from valley center. Make sure underlayment covers all fasteners.
- E Roof Deck:**
1. Install one layer of roof deck underlayment over the entire area not protected by eaves or valley membrane. Install sheets horizontally so water sheds and nail in place with minimum 2" head lap and 6" side lap. (4" head lap in wet or snow areas)

2. Nail underlayment 12" on center at the head lap and 36" on center at the center of roll.

F Penetrations:

1. Vent pipes: Install a 24 inch (610 mm) square piece of eave protection membrane lapping over roof deck underlayment; seal tightly to pipe.
2. Vertical walls: Install eave protection membrane extending at least 6 inches (150 mm) up the wall and 12 inches (305 mm) on to the roof surface. Lap the membrane over the roof deck underlayment.
3. Chimneys: Install eaves protection membrane around entire chimney extending at least 6 inches (150 mm) up the wall and 12 inches (305 mm) on to the roof surface. Lap the membrane over the roof deck underlayment.
4. Rake Edges: Install approved metal edge flashing over eaves protection membrane and roof deck underlayment; set tight to rake boards; lap joints at least 2 inches (50 mm) and seal with plastic cement; secure with nails.
5. Hips and Ridges: Install leak barrier along entire lengths. If ridge vents are to be installed, position the leak barrier so that the ridge slots will not be covered.

3.05 INSTALLATION OF SLATES

A General:

1. Install in accordance with manufacturer's instructions and local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
2. Minimize breakage of slates by avoiding dropping crates or individual slates.

B Moisture Barrier

1. Install interlayment over eave metal $\frac{1}{4}$ " from eave edge, (Install $\frac{1}{4}$ "x 2" lathe strip under eave metal for riser.) There is no starter course.

C Slate Installation

1. Begin installation with one layer of interlayment $\frac{1}{4}$ " from edge of eave metal.
2. Install slate over interlayment flush with eave edge with 2 copper nails per slate. Continue successive courses with 8" exposure of slates covered by interlayment between each course. Minimize traffic over finished roof surface. If necessary, wear soft-soled shoes and walk on the "butt" of the slates in order to avoid breakage.
3. Slate pieces should not be smaller than 4" (102mm) wide.

D High Wind Installation Requirements: Slate Installation:

1. Slates must not overhang the eave or rake edge. The bottom edge of the slates must be flush to the eave edge, or side of rake edge.

E Valleys

1. Prepare the valley with approved metal flashings.

F Penetrations

1. All Penetrations are to be flashed according to manufacturer's, ARMA and NRCA application instructions and construction details.

3.06 VENTILATION

A General

1. Ventilation must meet or exceed current F.H.A., H.U.D. and local code requirements.

B Ridge / Soffit ventilation

1. Calculate the total length of Ridge Vent needed. This will determine the necessary slot opening required.
2. For roofs without a ridge board, cut a $\frac{7}{8}$ " opening along the ridge on each side.

3. For roofs with a ridge board, cut a 1-5/8" opening along the ridge on each side.
4. Note: The total maximum slot opening is 3-1/4" wide.
5. Mark off and cut the slot opening. Ensure that the ends of the opening stop at least 6" from end walls. The ends of the opening must stop at least 12" from hip and ridge intersections or chimneys.
6. Where short ridges (dormers, ridge intersections) are used mark and cut the slot and ensure that the end of the opening stops at least 12" from the ridge intersection.
7. Install ridge vent material along the entire length of ridge, including uncut areas. Cover exposed fastener heads with exterior grade caulk.
8. Butt ends of ridge vent material together and cover joints with 6" strip of self-adhering leak barrier. Leave a 1/8" gap between ridge vent sections for installations in cold climates.
9. Install under eave vents with sufficient quantity of Net Free Area (NFA) to equal or exceed the ridge vent Net Free Area (NFA).
10. Install hip and ridge slates over ridge vent material; use nails of specified length.

3.07 PROTECTION

- A Protect installed products from foot traffic until completion of the project.
- B Any roof areas that are not completed by the end of the workday are to be protected from moisture and contaminants.

END OF SECTION