

SECTION 07315

SLATE SHINGLES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Slate Shingles
 - 2. Self-adhering sheet underlayment
- B. Related Sections include the following:
 - 1. Division 6 Section “Rough Carpentry” for roof sheathing wood nailer strips.
 - 2. Division 7 Section “Sheet Metal Flashing and Trim” for metal roof-penetration flashings, counter flashings and flashings not part of this Section.

1.3 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM 1079 and glossary of NRCA’s “The NRCA Roofing and Waterproofing Manual” for definitions of terms related to roofing work in this Section.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain each color of slate from single quarry capable of producing slate of consistent quality in appearance and physical properties.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store underlayment rolls on end on pallets or other raised surfaces. Do not double stack rolls.
 - 1. Handle, store and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.
- B. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

1.6 PROJECT PROJECTIONS

- A. Environmental Limitations: Proceed with installation of self-adhering sheet underlayment only within the range of ambient and substrate temperatures recommended by manufacturer.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified:

2.1 SLATE

A. Manufacturers:

1. Evergreen Slate Company, Granville, NY (518) 642-2530

B. Slate Shingles: C406-89, Grade S1; hard, dense, and sound; chamfered edges, with nail holes machine punched or drilled and countersunk. No broken or cracked slates, no broken exposed corners, and no broken corners on covered ends that could sacrifice nailing strength or laying of a watertight roof.

1. Thickness of Slate:

- | | |
|-----------------------------------------|-------------------------|
| A. ¼" Standard Smooth Texture | 850 Pounds per square |
| B. ¼" to 3/8" Thickness – Rough Texture | 1000 Pounds per square. |
| C. 3/8" to ½" Thickness – Rough Texture | 1500 Pounds per square. |
| D. ½" to ¾" Thickness – Rough Texture | 2200 Pounds per square. |
| E. ¾" to 1" Thickness – Rough Texture | 3000 Pounds per square. |

2. Size:

- A. Length of Slate To Be _____"
- B. Width of Slate To Be _____"
- C. Graduated In Length from _____" to _____".

(If Random Widths to be used, width shall not be less than ½ length.

3. Butt Shape:

- A. Standard Square Cut
- B. Clipped Corners (Hexagonal)
- C. Clipped Corners (Diamond)
- D. Round Butts (Beaver Tail)

4. Color:

- A. Vermont Semi-Weathering Gray Green
- B. Vermont Semi-Weathering Gray
- C. Vermont Black
- D. Vermont Mottled Gray-Black
- E. Vermont Unfading Green
- F. Vermont Unfading Gray
- G. New York Unfading Red
- H. Vermont Royal Purple
- I. Vermont Unfading Mottled Green & Purple
- J. Vermont Variegated Purple
- K. Unfading Clear Black (Asian)

- C. Starter Slate: Slate shingles, with nail holes, front side punched.
 - 1. Length: Exposure of slate shingle plus headlap.

2.2 UNDERLAYMENT MATERIALS

- A. Self-Adhering Sheet Underlayment, Polyethylene Faced: ASTM D 1970, minimum of 40 mils thick; slip resisting, polyethylene film reinforced top surface laminated to SBS – modified asphalt adhesive, with release-paper backing; cold applied.

2.3 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D4586, Type II, asbestos free.
- B. Butyl Sealant: ASTM C1311, single component, solvent release butyl rubber sealant; polyisobutylene plasticized; heavy bodied.
- C. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in slate-shingle roofing and remain watertight.
- D. Slating Nails: ASTM F1667; Copper smooth shank wire nails, sharp pointed, with 3/8 inch minimum diameter flat head, and of sufficient length to penetrate a minimum of 3/4 inch into sheathing.
 - 1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

2.4 METAL FLASHING AND TRIM

- A. Sheet Metal Flashing and Trim: Comply with requirements in Division 7 Section “Sheet Metal Flashing and Trim”.
 - 1. Sheet Metal: Copper
- B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA’s “Architectural Sheet Metal Manual” that apply to design, dimensions, metal, and other characteristics of item.
 - 1. Step Flashings: Fabricate with a 3 inch headlap extending a minimum of 4 inches over the underlying slate shingles and up the vertical surface.
 - 2. Open-Valley Flashing (If used): Fabricate in lengths not exceeding 10 feet with 1-inch high, inverted V profile at center of valley and equal flange widths of 10 inches.
 - 3. Closed-Valley Flashings (If used): Fabricate in lengths not exceeding 10 feet and equal flange widths of 10 inches.
 - 4. Drip Edges: Fabricate in lengths not exceeding 10 feet with 2-inch roof deck flange and 1-1/2 inch fascia flange with 3/8 inch drip at lower edge.
- C. Vent Pipe Flashing: ASTM B749, Type L51121, at least 1/16 inch thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof and extending a least 4 inches from pipe onto roof.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
1. Examine roof sheathing to verify sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings and penetrations through roofing.
 3. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 ROOF UNDERLAYMENT INSTALLATION

- A. Self-Adhering Sheet Underlayment: Install wrinkle free, complying with low-temperature installation restrictions of underlayment manufacturer, if applicable. Install at locations indicated on Drawings, lapped in direction to shed water. Lap sides not less than 3-1/2 inches. Lap ends not less than 6 inches, staggered 24 inches between courses. Roll laps with roller. Cover underlayment within seven days.
1. Prime concrete and masonry surfaces to receive self adhering sheet underlayment.
 2. Eaves: Extend from edges of eaves 36 inches beyond interior face of exterior wall.
 3. Valleys: Extend from lowest to highest point 18 inches on each side.
 4. Hips: Extend 18 inches on each side.
 5. Ridges: Extend 36 inches on each side without obstructing continuous ridge vent slot.
 6. Roof-Slope Transitions: Extend 18 inches on each roof slope.

3.3 METAL FLASHING INSTALLATION

- A. General: Install metal flashings and other sheet metal to comply with requirements in Division 7 Section "Sheet Metal Flashing and Trim"
1. Install metal flashings according to recommendations in NRCA's "The NRCA's Roofing and Waterproofing Manual".
- B. Step Flashings: Install with a 3-inch headlap extending over the underlying slate shingles and up the vertical surface. Install with lower edge of flashing just upslope of, and concealed by, butt of overlying slate shingle. Fasten to roof deck only.

- C. Open or Closed Valley Flashings, as recommended by the manufacturer. Install centrally in valleys, tapping ends at least 8 inches in direction to shed water. Fasten upper end of each length to roof deck beneath overlap.
 - 1. Secure hemmed flange edges into metal cleats spaced 12 inches apart and fastened to roof deck.
 - 2. Adhere 9-inch wide strips of self-adhering sheet to metal flanges and to self-adhering sheet underlayment.
- D. Eave Drip Edges: Install beneath underlayment and fasten to roof deck.
- E. Pipe Flashing: From flashing around pipe penetrations and slate shingles. Fasten and seal to slate shingles.

3.4 SLATE-SHINGLE INSTALLATION

- A. Installation, General: Beginning at eaves, install slate shingles according to written recommendations of manufacturer and details and recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual".
 - 1. Install shingle starter course chamfered face down.
- B. Install first and remaining shingle courses with chamfered edge face up. Install full-width first course at rake edge.
 - 1. Offset joints of uniform width slate shingles by half the shingle width in succeeding courses.
 - 2. Offset joints of random width slate shingles a minimum of 3 inches in succeeding courses.
- C. Maintain a 3-inch minimum head lap between succeeding shingle courses for roof pitches of 6/12 or greater.
- D. Maintain a 4-inch minimum head lap between succeeding shingle courses for roof pitches of 4/12 and 5/12.
- E. Maintain uniform exposure of shingle courses between eaves and ridges.
- F. Extend shingle starter course and first course 2 inches over fascia at eaves.
- G. Extend shingle starter course and succeeding courses 1 inch over fascia at rakes.
- H. Cut and fit slate neatly around roof vents, pipes, ventilators, and other projections through roof.
- I. Hang slate with two slating nails for each shingle with nail heads lightly touching slate. Do not drive nails home drawing slates downward or leave nail head protruding enough to interfere with overlapping shingle above.
 - 1. For vented ridge, terminate slate shingles leaving uniform air space each side of ridge apex.
- J. Ridges: Install ridge slate in the following:
 - 1. Saddle Ridge (or)
 - 2. Strip Saddle Ridge (or)
 - 3. Comb Ridge (or)
 - 4. Copper Ridge

K. Hips: Install hip slate in the following:

1. Mitered Hip (or)
2. Saddle Hip (or)
3. Boston Hip (or)
4. Fantail Hip (or)
5. Copper

L. Open Valleys: Cut slate shingles to form straight lines at open valleys, trimming upper concealed corners of shingles. Maintain uniform width of exposed open valley from highest to lowest point.

1. Do not nail shingles to valley metal flashings.

M. Closed Valleys: Cut slate shingles to form straight lines at closed valleys, trimming upper concealed corners of shingles. Maintain uniform gap at centerline of valley of $\frac{1}{2}$ to $\frac{3}{4}$ inch

1. Do not nail shingles to valley metal flashings.

3.5 ADJUSTING AND CLEANING

- A. Remove and replace damaged or broken slates.
- B. Remove excess slate and debris from Project site.

END OF SECTION