

1 GENERAL

1.1 SUMMARY OF WORK

- A. This Section specifies composite emulated slate roof tiles.

1.2 REFERENCE STANDARDS

- A. ASTM International (ASTM).
1. ASTM D7349/D7349M-2011, Standard Test Method for Determining the Capability of Roofing and Waterproofing Materials to Seal around Fasteners.
 2. ASTM E108-2010a, Standard Test Methods for Fire Tests of Roof Coverings.
 3. ASTM F1667-2011, Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
- B. Underwriter's Laboratories (UL)
1. UL 2218-2010, Standard for Impact Resistance of Prepared Roof Covering Materials.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- A. Product Data: Submit product data including manufacturer's literature for composite roof slate tile components and accessories, indicating compliance with specified requirements and material characteristics.
1. Submit list on composite roof tile manufacturer's letterhead of materials, components and accessories to be incorporated into Work.
 2. Include product names, types and series numbers.
 3. Include contact information for manufacturer and their representative for this Project.
- B. Samples:
1. Submit duplicate full size samples of composite slate roof tile used.
- E. Test Reports:
- .1 Submit test reports showing compliance with specified performance characteristics and physical properties.
- F. .1 Field Reports: Submit manufacturer's field reports within 3 days of each manufacturer representative's site visit and inspection.
- G. Installer Qualifications:
- .1 Submit verification of manufacturer's certification of installer letter verifying installer's experience with work similar to work of this Section.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's certification for installation of composite slate roofing.

1.5 DELIVERY STORAGE AND HANDLING

- A. Delivery and Requirements:
1. Deliver materials and components in manufacturer's original packaging with identification labels intact.
- B. Storage and Handling Requirements: Store materials off ground and protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
1. Exercise care to avoid damage during unloading and storing.
 2. Do not stack material or other skids on top of ridge caps.

1.6 WARRANTY

- A. Project Warranty: Refer to Contract Conditions for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and not intended to limit other rights Owner may have under Contract Conditions.
- C. Warranty period:
 - 1. Commercial installations: 50 years commencing on Date of Purchase.

2 PRODUCTS

2.1 MANUFACTURER

- A. Manufacturer: Enviroshake® Inc., 650 Riverview Drive, Chatham, Ontario, N7M 5W8, Canada, Phone: (519) 380-9265, Toll Free: (866) 423-3302, FAX: (519) 380-0689, e-mail: info@enviroshake.com, URL: <http://www.enviroshake.com>.

2.2 DESCRIPTION

- A. Slate style composite roofing tile.
- B. Acceptable Material: Enviroshake® Inc., Enviroslate®.

2.3 DESIGN CRITERIA

- A. Roof Slope: 2:12 minimum.
- B. Ensure roof design load includes shingle weight of 260 lbs per 100 square feet minimum.
- C. Fire Resistance: To ASTM E108
 - 1. UBC Standard 15-2 Rating: Class C.
 - 2. A Class A roof system rating can be achieved by using a Class A rated underlayment.
- D. Impact Resistance: To UL 2218, Class 4.
- E. Accelerated Weathering: To UBC Standard 26-6 and 26-7.

2.4 MATERIALS

- A. Composite Roofing Slate: Blend of post industrial plastic, elastomers and cellulosic fiber materials
 - 1. Recycled content: 95 %.
 - 2. Appearance: Slate tile style 20 inches long x 12 inches wide, single width profile, exposed surface textured for first 9 inches, from butt end and flat and smooth to tapered end; black, dark gray or silver gray in color.
 - 3. Color: Match Existing

2.7 ACCESSORIES

- A. Ridge Caps: Purpose made from same material as composite roofing slate 12 inches wide one piece tile, custom formed to angle of roof slope from 2:12-18:12.
- B. Eaves Protection: To ASTM D7349/D7349M, self adhesive, self sealing rubberized asphalt bonded to polyethylene film composite sheet material 40 mil minimum thickness.
- C. Drip Edges: 26 ga minimum thick, match existing metal, purpose made and preformed.
- D. Flashing: 26 ga minimum thick, match existing metal, 24 inches wide "W" flashing
- E. Underlayment: Titanium PSU-30 synthetic underlay to ASTM E108. Manufacturer: InterWrap Roofing Products, Toll Free: 888-713-7663, email: info@interwrap.com

- F. Roofing Nails: To ASTM F1667, 1 ½ inch hot-dipped galvanized steel roofing nails.

2.8 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

3 EXECUTION

3.1 INSTALLERS

- A. Use only Enviroshake Inc. certified installers for installers with 2 years minimum experience in work similar to work of this Section.

3.2 EXAMINATION

- A. Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for composite roof shake installation in accordance with manufacturer's written recommendations.
1. Visually inspect substrate in presence of COR.
 - a. Verify roof slope.
 2. Inform COR of unacceptable conditions immediately upon discovery.
 3. Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from COR.

3.3 PREPARATION

- A. Removal of Existing Slate Roofing:
1. Remove existing roofing, flashings and underlay to expose sheathing.
- B. Remove existing slate and flashing nails and set nails which break off.
1. Leave surfaces free from dirt and loose material.
- C. Proceed with work only after receipt of written approval from COR.
1. Remove unsuitable portions of sheathing boards, including areas affected by fungal or insect attack as directed by COR.
- D. Replace cut out portions of sheathing boards or lath with boards of equal sectional dimensions and grade.
1. Seat each end of board on roof truss, with 1 inch minimum bearing and secure with mechanical fasteners.

3.4 COMPOSITE SLATE ROOFING INSTALLATION

- A. Do composite slate roofing in accordance with roofing manufacturer's written recommendations.
- B. Nail drip edge along roof deck edges at 16 inch maximum on center before installation of eaves protection.
1. Ensure drip edge overhangs fascia ½ inch minimum with 2 inch flange extending on to roof deck.
- C. Install self-adhesive eaves protection from bottom edge of roof deck to 3 feet minimum from roof edge.
1. Install eaves protection over ridges, valleys and at projections or penetrations through roof.
 2. Lap seams 4 inches minimum.
 3. Include step and apron flashings at chimneys, ridge cap, ridge vent, and dormer windows.
 4. Nail flashings in accordance with composite shake manufacturer's written recommendations.
 5. Apply bead of sealant to flashing edges and joints.
- D. Nail synthetic underlay horizontally to roof slope above eaves protection.
1. Overlap eaves protection 4 inches minimum.
 2. Ensure roof deck is completely covered by a synthetic underlayment.
 3. Overlap breathable synthetic underlay 2 inches minimum at top edges and 4 inches minimum at side edges.
 4. Use synthetic underlay of weight meeting requirements of authority having jurisdiction.

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5. Nail drip edges along rakes after underlayment is laid.
6. Nail top edges of synthetic underlay strips into sheathing at 6 feet on center.
- E. Install composite roofing tiles in accordance with manufacturer's written recommendations.
 1. Use double starter course at bottom edges, including vertical and high slope roof surfaces.
 2. Install course straight and plumb.
 - a. Exposure: 9 inches maximum.
 - b. Avoid keyway on keyway pattern.
 - c. Avoid "staircase" pattern.
 3. Fasten each tile with 4 nails minimum regardless of tile width.
 - a. Space nails in accordance with shake manufacturer's written recommendations.
 - b. Drive nails flush with surface of tile.
 - c. Ensure tile surface is not crushed.
 4. Shake spacing: 3/8 inch.
 5. Overlap between shake joints: 1-1/2 inches minimum.
 6. Lay each consecutive row of tiles in accordance with manufacturer's written recommendations.
 7. Cut tiles to fit accurately around roof projections.
 - a. Allow 1 inch clearance around roof projections, in valleys and beside flashings.
 - b. Use only uncut factory edges kept flush along rake and gable ends and where ends are exposed.
 8. Install ridge caps over eaves protection at ridges.
 - a. Exposure: 9 inches maximum.
 - b. Fasten each ridge cap with 2 nails minimum.
 - c. Space nails in accordance with shake manufacturer's written recommendations.
 - d. Drive nails flush with surface ridge cap.
 - e. Ensure ridge cap surface is not crushed.
 9. At valleys saw tiles parallel to valley center line.
 - a. Do not break joints into valley.

3.7 CLEANING

- A. Progress Cleaning: Perform cleanup as work progresses.
 1. Leave work area clean end of each day.
- B. Final cleaning: Upon completion, remove surplus materials, rubbish, tools, and equipment.

3.8 PROTECTION

- A. Protect installed products and components from damage during construction.
- B. Repair damage to adjacent materials caused by composite slate roof tile installation.

END OF SECTION 07 31 34 – COMPOSITE SLATE ROOFING