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eco-shake®
INSTALLATION INSTRUCTION

NOTE: Shuffling the eco-shakes during installation may be necessary to obtain a uniform color throughout the roof. Due to the natural wood content in the eco-shakes, a natural range of shades can be seen in all color selections.

PREPARATION OF EXISTING SURFACES FOR REROOFING

A. Remove old roofing and underlayment down to deck.
B. Install 15/32" thick A-B Exterior Grade plywood over open sheathing with common hot dipped galvanized or Type 304 stainless steel nails machine or hand driven with sufficient length to provide minimum 3/4" penetration in supporting structural members (or as is required by your local/state building code officials).
C. Plumbing stacks and roof penetrations shall be in place and flashed to deck surface. Extend piping as necessary to a minimum of 8" above deck.
D. Correctly frame roof openings.
E. Deck surfaces shall be dry, free of ridges, warps and voids.

ROOF DECK FOR NEW CONSTRUCTION

A. Install 15/32" thick A-B Exterior Grade plywood or minimum 3/4" thick solid wood decking over supporting wood roof structure with common hot dipped galvanized or Type 304 stainless steel nails machine or hand driven with sufficient length to provide minimum 3/4" penetration in supporting structural members (or as required by your local/state building code officials).
B. Structural deck shall provide minimum 2" rise in 12" slope.
C. Plumbing stacks and roof penetrations shall be in place and flashed to deck surface. Extend piping as necessary to a minimum of 8" above deck.
D. Correctly frame roof openings.
E. Deck surfaces shall be dry, free of ridges, warps and voids.

PREPARATION OF SUBSTRATE

A. Broom deck surfaces clean.
B. Fill knot holes and surface cracks with latex filler at areas of bonded eave protection. Cover knot holes with sheet metal.

INSTALLATION - EAVE, RAKE, RIDGE (ICE DAM) PROTECTION

A. Place eave edge and gable rake edge metal flashings tight with fascia boards. Weather lap joints 2 inches (50 mm) and seal with plastic cement. Secure flange with nails spaced 8 inches (200 mm) oc.
B. Apply rubberized asphalt/polyethylene sheet eave protection equal to GAF "Weather Watch" or Tamko "Weather Guard" in accordance with manufacturer's instructions.
C. Extend eave Ice Dam Protection membrane minimum 3 feet (600 to 1200 mm)

up-slope beyond interior face of exterior wall.
D. Install 18 inch (450 mm) wide underlayment at gable rake.
E. Install 36 inch (900 mm) wide ice dam underlayment centered over ridges and hips providing 18 inches (450 mm) of coverage on each slope.

INSTALLATION - PROTECTIVE UNDERLAYMENT
A. Place one ply of 30# Organic UL tested ASTM D-226 Type II (Non-perforated) felt underlayment over area not protected by Ice Dam protection, with ends and edges weather lapped minimum 6 inches (150 mm). Stagger end laps of each consecutive layer. Nail in place.
B. Install protective underlayment perpendicular to slope of roof and weather lap minimum 4 inches (100 mm) over eave protection.
C. Weather lap and seal watertight with plastic cement items projecting through or mounted on roof.
D. No underlayment shall be exposed to the weather in completed installation.

INSTALLATION-VALLEY PROTECTION AND METAL FLASHING
A. Place one ply of Ice Dam Protection Underlayment roofing, minimum 36 inches (900 mm) wide, centered over valleys. Weather lap joints minimum 3 inches (75 mm).
B. Place one layer of galvanized sheet metal flashing, minimum 26 gage thickness, 16 oz. copper or minimum .030 inch (7.5 mm) thick aluminum minimum 24 inches (600 mm) wide, centered over open valleys and "V" crimp to guide water. Weather lap joints minimum 4 inches (100 mm) and seal. Nail metal clips of similar metal in place minimum 18 inches (450 mm) on center.
C. Trim shake back 4 inches (100 mm) from valley "vee crimp".

INSTALLATION - METAL FLASHING AND ACCESSORIES
A. Weather lap joints minimum 3 inches (75 mm) and seal weather tight with plastic cement.
B. Secure in place with nails at 18 inches (450 mm) on center. Conceal fastenings.
C. Flash and seal work weather tight, projecting through or mounted on roofing with plastic cement.

INSTALLATION - SHAKES STARTER COURSE
A. "Cut Starter" course from full size "eco shake" 11 inches (275 mm) from butt end. Save 11 inch (275 mm) butt end for "ridge filler" at ridge & hip installation locations. You can also use any 50 year asphalt shingle as a starter course.
B. Nail smooth surfaced 11 inch (275 mm) "tail piece" as "starter course" with the cut edge exposed leaving 1 inch (25.4 mm) overhang at eave metal trim with (2) nails at "tail end" 4 inches (100 mm) above eave and 2 inches (50 mm) from each side.
C. Set "starter course" in 8 inch (200 mm) wide bed of flashing cement.
D. Overlap rabbeted sides a minimum of 1 inch (25 mm).
E. Seal rabbeted edge with 1/4" - 3/8" continuous bead of Geocel 2300 or other like adhesive.

F. Seal "starter course" to next course with 1/4" - 3/8" continuous bead of Geocel 2300 or other like adhesive, with 1 inch (25 mm) of the outside edge.

INSTALLATION-SHAKES

A. Lay shakes over approved protective underlayment to produce **straight coursing** pattern with 10 inches (250 mm) weather exposure to produce a double thickness over the entire roof area.
Staggered coursing - Stagger shingles up to and not greater than notched area on overlap. Maintain maximum of 10" weather exposure.

B. Nail "eco shake" in place with (3) 1 1/4 inch "non-corosive" 6d roofing nails with "hot dipped galvanized" coating or of Type 304 stainless steel either hand or pneumatically driven (If nails are pneumatically driven, do not exceed 100 psi). Nails should be set flush with the surface of the shingle and should penetrate completely through the deck. Nails should be located as follows:
(2) nails 8 inches (200 mm) down from top (tail edge) and 2 inches (50 mm) in from each side.
(1) nail 2 inches (50 mm) up from bottom (butt edge) and 1 inch (25 mm) in from rabbeted edge.

C. Provide double course of shakes by using starter course mentioned above at eaves.

D. Project first course of shakes 1 inch (38 mm) beyond face of fascia boards and stagger joints over "starter course". **Keyway shall not be positioned within 1-1/2 inches (38 mm) of previous course**.

E. Overlap sides a minimum of 1 inch (25 mm).

F. Coordinate installation of roof mounted components or work projecting through roof with weather tight placement of counter flashings.

G. *Extra care during installation may be needed when temperatures are near and/or fall below freezing or when eco-shakes are exposed to freezing and/or near freezing temperatures for extended periods of time (this may include hand nailing).*

INSTALLATION - RIDGE & HIP LOCATIONS

A. Position 11 inch (275 mm) "ridge filler" cut from eave "starter course" at ridge lapping over ice dam protection underlayment mentioned above and providing maximum 10 inches (250 mm) weather exposure on last full course of "eco shake".

B. Nail textured surface 11 inch (275 mm) long "butt piece" cut from "eave starter course" with (3) nails as follows:
(2) nails 4 inches (100 mm) down from top (tail end) and 2 inches (50 mm) in from each side.
(1) nail 2 inches (50 mm) up from bottom (butt edge) and 1 inch (25 mm) in from rabbeted edge.

C. Install 12 inch (300 mm) wide preformed "eco shake ridge" pieces in shingle fashion over "ridge filler" providing 6 inches (150 mm) coverage on each slope. Overlap 18 inch (450 mm) strip of 30# organic felt underlayment between each ridge shake overlapping "tail end of shake 3 inches (75 mm).

D. Nail in place with (4) 2 inch (50 mm) nails placed as follows:
(2) nails 2 inches (50 mm) from "tail end" and 2 inches (50 mm) from each side.
(2) nails 8 inches (200 mm) from "tail end" and 2 inches (50 mm) from each side.

E. All nails should be flush set with the surface of the shingle and should penetrate

completely through the deck.

PROTECTION OF FINISHED WORK
A. Protect installed work.
B. Do not permit traffic over finished roof area.

SPECIAL INSTRUCTIONS FOR COASTAL REGIONS

INSTALLATION - EAVE & RAKE EDGE METAL (**Coastal Regions**)
A. Install 3 inch (75 mm) x 3 inch (75 mm) galvanized metal drip edge at perimeter eaves and rakes set tight to decking. If gap is created due to irregularities, the gap shall be sealed in a bed of flashing cement after priming.
B. Fasten drip edge at 4 inches (100 mm) on center approximately 1 inch (25 mm) from the top edge. "Strip in" nails with flashing cement and 6 inch (150 mm) wide fabric.
C. Overlap edge metal at corners 5 inches (125 mm). Notch and bend around corner. Coat overlap with flashing cement after priming.

INSTALLATION - PROTECTIVE UNDERLAYMENT (**Coastal Regions**)
A. In building locations where ice & snow are not common and buildings are exposed to winds from bodies of water such as Coastal Regions, delete modified bitumen ice dam protection at eaves, valleys, hips & ridges and install a double layer of 30# Organic UL tested ASTM D-226 Type II (Non-perforated) felt underlayment with 19 inch (475 mm) overlap.
B. Fasten underlayment with 12 ga. x 1-1/4inches (31 mm) annular ring shank galvanized roofing nails with 32 ga. x 1-3/4 inches (44 mm) diameter tin caps, 6 inches (150 mm) on center 1 inch (25 mm) from horizontal side lap and 2 rows 12 inches (300 mm) on center staggered in the field.
C. Vertical side laps shall be woven at valleys. Extend top ply minimum 12 inches (300 mm) past valley center line.
D. Install protective underlayment perpendicular to slope of roof.
E. Weather lap and seal watertight with plastic cement items projecting through or mounted on roof.
F. No underlayment shall be exposed to the weather in completed installation.

INSTALLATION - VALLEY PROTECTION (**Coastal Regions**)
A. In building locations where ice & snow are not common and buildings are exposed to winds from bodies of water such as Coastal Regions, in lieu of modified bitumen ice dam protection install one additional 36 inch (900 mm) wide ply of 30# Organic UL tested ASTM D-226 Type II (Non-perforated) felt underlayment centered on valley and fastened with sufficient fasteners to secure in place until metal flashing installation.
B. Place one layer of galvanized sheet metal flashing, minimum 26 gage thickness, 16 oz. copper or minimum .030 inch (7.5 mm) thick aluminum minimum 24 inches (600 mm) wide, centered over open valleys and "V" crimp to guide water. Weather lap joints minimum 4 inches (100 mm) and seal.

C. Install valley metal flashing in 1//8 inch (3 mm) continuous bead of ASTM D 4586 flashing cement and fasten 4 inches (100 mm) on center within 1 inch (25 mm) from the outside edge of valley metal.
D Lap valley metal 4 inches, prime and set in bed of flashing cement.
E "Three course" outside edges of valley metal with flashing cement and 6 inch (150 mm) wide fabric after priming.
F. Trim shake back 4 inches (100 mm) from valley "vee crimp".

FIRE-RETARDANT RATINGS

The normal underlayment of 30 lb. asphalt-saturated organic felt confers a UL Class C fire rating for both new and reroofing applications. The following are types of underlayment needed to meet Class A ratings: Two layers of Elk Corporation Versashield, 1/2" sheet of gypsum board or 1/4" Georgia Pacific Dens-Deck must be applied over solid decking.