



VANDE HEY RALEIGH

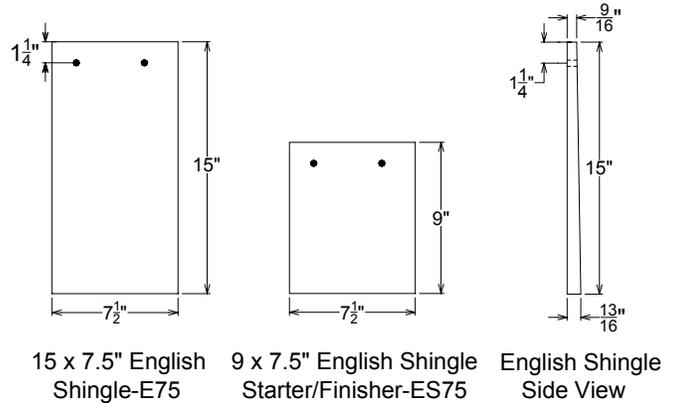
Masters in the Artistry of Roof Tile

ENGLISH AND TURRET SHINGLES

Shingles are manufactured in several different sizes for various applications. They are available in standard and custom colors and custom surface textures to match the standard Vande Hey Raleigh field tile. 9" long starter/finisher pieces are used at the eave and at the top row when installing all shingles. (Figures 1 and 2)

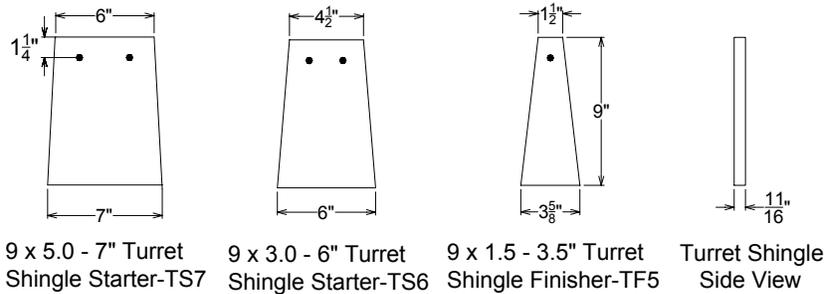
English shingles (tapered thickness) are available in standard sizes (Page 2) and can be custom sized when used to match existing shingles on reroofs and additions. They are popular on small roof areas, over bowed windows or as siding on dormers. (Figure 1& Section 1)

Turret shingles are available in 9 tapered sizes (computer matched) to be used on round turrets with minimal cutting. Their unique design adds beauty and grace to a curved roof. (Figure 2 & Section 2)

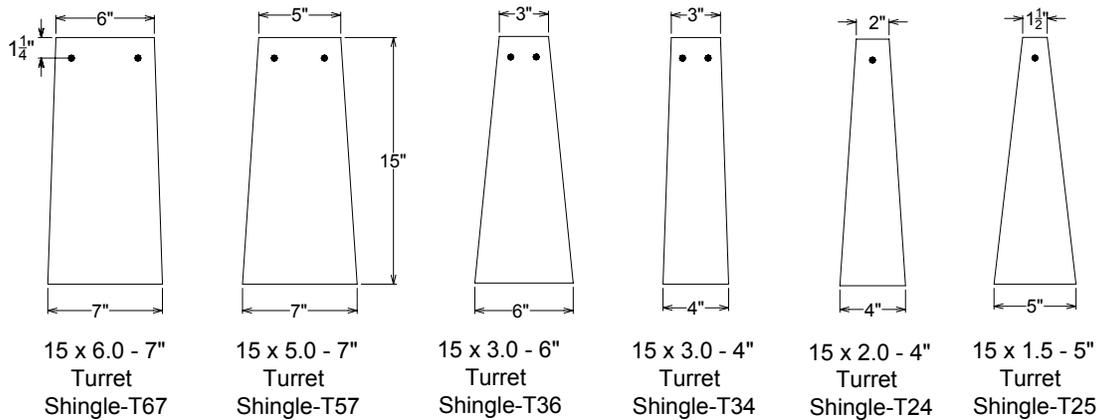


15 x 7.5" English Shingle-E75 9 x 7.5" English Shingle Starter/Finisher-ES75 English Shingle Side View

FIGURE 1. SIZES OF ENGLISH SHINGLE



9 x 5.0 - 7" Turret Shingle Starter-TS7 9 x 3.0 - 6" Turret Shingle Starter-TS6 9 x 1.5 - 3.5" Turret Shingle Finisher-TF5 Turret Shingle Side View



15 x 6.0 - 7" Turret Shingle-T67 15 x 5.0 - 7" Turret Shingle-T57 15 x 3.0 - 6" Turret Shingle-T36 15 x 3.0 - 4" Turret Shingle-T34 15 x 2.0 - 4" Turret Shingle-T24 15 x 1.5 - 5" Turret Shingle-T25

FIGURE 2. SIZES OF TURRET SHINGLES (11/16" THICK)

1665 Bohm Drive • Little Chute, WI 54140-2529 • 920-766-0156 • 1-800-236-8453 (tile) • Fax 920-766-0776
An Affirmative Action, Equal Opportunity Employer

TECHNICAL DATA

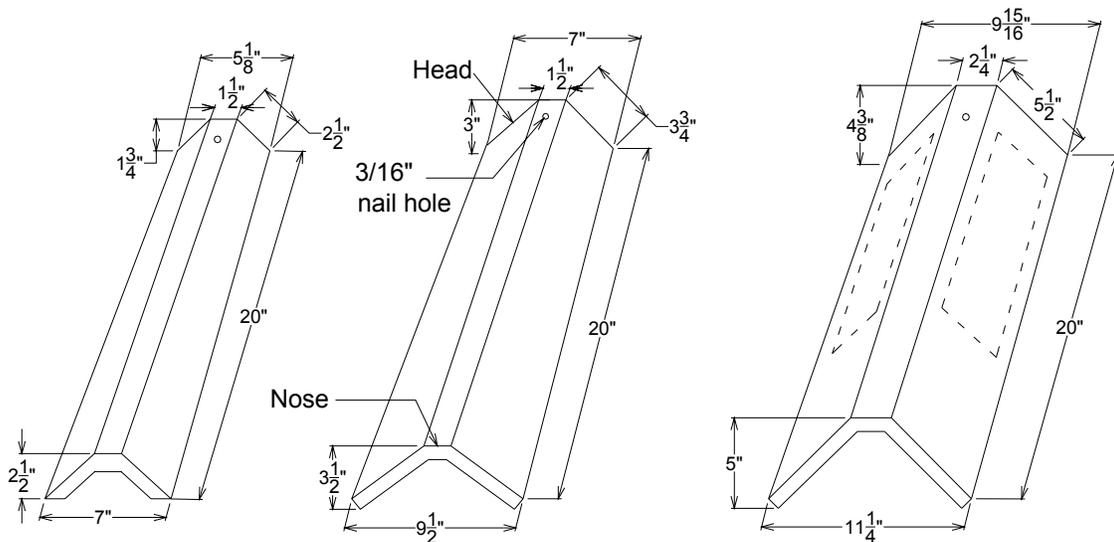
Style		Shingles Per Square*	Average Exposure Per Shingle	Approx Lbs per Square*	Approx Kgs per Sq Mtr*	Approx Sq Per Pallet (ordered)
English						
E5	15" x 5"	468	6" x 5"	2,006	97.9	1.1
E6	15" x 6"	390	6" x 6"	2,006	97.9	1.0
E65	15" x 6.5"	362	6" x 6.5"	2,006	97.9	1.0
E75	15" x 7.5"	315	6" x 7½"	2,006	97.9	1.1
Turret						
T25	15" x 1.5" - 5"	543	6" x 4.3"	1,800	87.9	1.0
T24	15" x 2" - 4"	646	6" x 3.7"	1,800	87.9	.9
T34	15" x 3" - 4"	611	6" x 3.9"	1,800	87.9	.8
T36	15" x 3" - 6"	434	6" x 5.4"	1,800	87.9	.9
T57	15" x 5" - 7"	356	6" x 6.6"	1,800	87.9	.9
T67	15" x 6" - 7"	346	6" x 6.8"	1,800	87.9	.9

Shingles are not recommended for roof slopes below
4:12 in the sunbelt or below 6:12 in severe weather areas.

*For shingles laid in a staggered pattern increase weight and shingles per square by 9%.
1/3 of the shingles are laid with 5", 5½" and 6" exposure.

TRIM PIECES

Regular hip/ridge, intermediate ridge trim or low profile hip pieces that match the color and texture of the shingles are available in lieu of hip or ridge flashings. (Figure 3)



**HIP/RIDGE LOW PROFILE
(HTL)**

**HIP/RIDGE REGULAR (HRR)
(At ridge without ridge venting)**

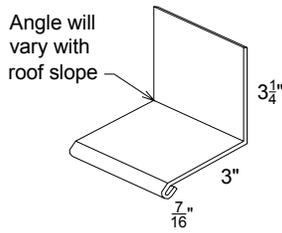
**RIDGE INTERMEDIATE (RTI)
(At ridge with ridge venting)**

FIGURE 3. TRIM PIECES FOR ENGLISH SHINGLE

4a. ANGLE FLASHING (7-3/16" girth)

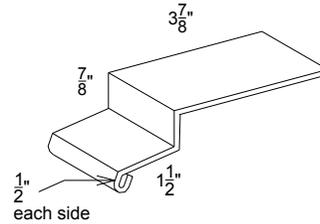
At headwalls and at the front of chimneys or skylights.

ANGL (Cpr-126, Alm-903)



4e. FLAT ROOF EAVE FLASHING

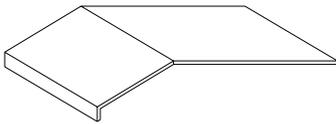
(7-1/4" girth) Where the bottom row of tile meets flat roof/saddles. (Copper)
FLAT ROOF EAVE (FE) (379)



4b. CAP FLASHINGS (dimensions vary)

Used at the top row of shingles where they meet a flat roof.

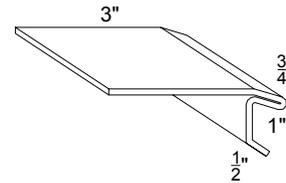
CAP (Cpr-900, Alm-078)



4f. GABLE "D" EDGE with Grout

(6" girth) At the gables when the shingles are grouted. (Copper)

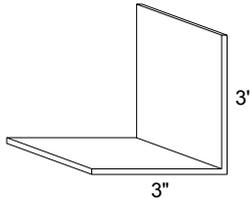
GBL SHINGLE "D" EDGE (462) (G-Yellow)



4c. CORNER FLASHING (6" girth)

On the outside corner when shingles are installed on a dormer. (Copper)

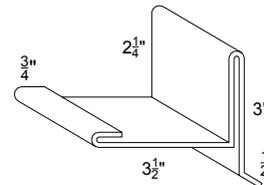
DORM CORNER SHINGLE (198)



4g. GABLE FLASHING w/o Grout

(10" girth) At the gables when the shingles are not grouted. (Copper) Starters required.

GBL SHINGLE (199) (G-Yellow)



4d. EAVE METAL (7-3/16" girth)

(Copper or aluminum)

EAVE (E) (Cpr-104, Alm-415)

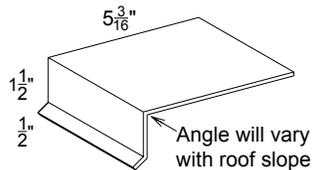


FIGURE 4. STANDARD FLASHINGS FOR SHINGLES Available from the manufacturer

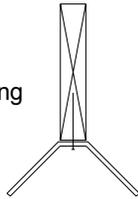
NOTES:

- A. Shop drawings and designs are available for starter pieces and special applications.
- B. Lap flashings a minimum of 4" for slopes 4:12 and above and 6" for slopes below 4:12.
- C. Secure flashings with ringshank nails compatible with flashing material. Do not nail at overlap.
- D. Abbreviations are used in item descriptions on the packing list and abbreviations & colors are used on the roof plan.
- E. 20 oz. Copper, Lead Coated Copper, Terne Coated Stainless Steel, 24 Ga. G90 Kynar 500 pre-finished colored steel, 26-24 Ga. G90 galvanized sheet steel or Aluminum can be substituted for 16 oz. copper.
- F. Where soldering is required, be sure to use rosin paper between the flashing and a special heat resistant underlayment and neutralize flux once joints are cool.

4h. HIP/RIDGE NAILER

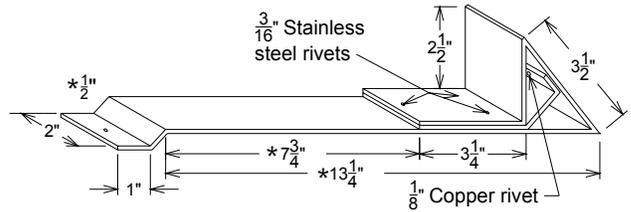
On non-vented hips and ridges.
(26 Ga Galv)
NAILER, HIP (H) (350)
NAILER, RIDGE (R) (574)

Height and angle will vary depending on roof slope



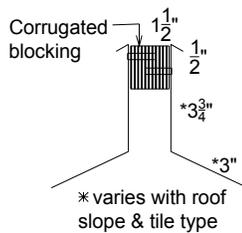
4L. SNOWGUARD-English

(* differs for Turret) (38 oz Copper)
SNW GRD ENGL (929)
TURT (928)



4i. HIP/RIDGE VENT (H) or (R) (595)

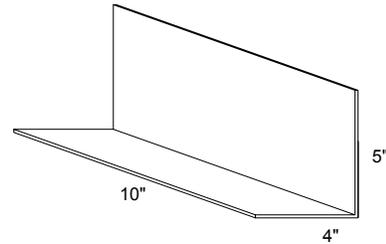
On vented hips and ridges. (26 Ga Galv)



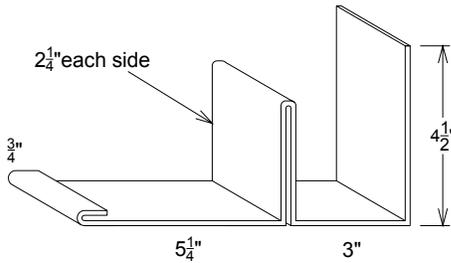
Includes ridge trim fastener (copper 3" R/S nail #048)

4m. STEP FLASHING (10" x 9")

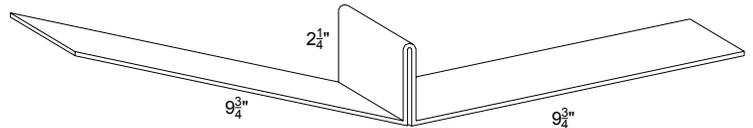
Used along side walls.
STEP SHINGLE (111)



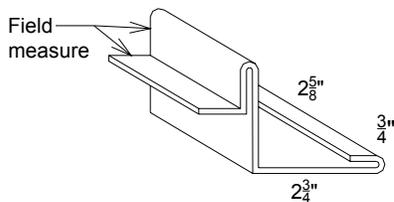
4j. SIDE SADDLE CHANNEL FLASHING (18" girth) Along sides of chimneys, skylights or curbs with saddles. (Copper) Starters required. SD SDDL CH (380) (SSC-Light Blue)



4n. CLOSED VALLEY FLASHING (24" girth) For valleys in non-wooded areas and slopes over 11:12. (Copper) Starter required. VLLY CLOSED SHINGLE (298) (V-Purple)



4k. SIDE WINDOW FLASHING Where vertical shingles meet a window. (Dimensions vary) (Copper) SD WINDOW SHINGLE (315)



4o. OPEN VALLEY FLASHING (24" girth) Open grouted valleys in wooded areas and slopes below 12:12. Wider girth required for valleys over 30 ft. (Copper) Starter required. VLLY OPEN SHINGLE (353) (V-Purple)



FIGURE 4 CONTINUED. STANDARD FLASHINGS FOR SHINGLES

SECTION 1: SEQUENCE OF INSTALLTION PROCEDURES FOR SHINGLES

1. Check rafters, trusses and roof deck for humps, dips and loading capacity. A minimum $\frac{3}{4}$ " deck is required.
2. Install eave metal over 8" plywood eave blocking over a $\frac{3}{8}$ " cant strip or a $\frac{3}{8}$ " raised fascia board with English Shingles. (Figure 5) See Page 10 (Paragraph 20, Figure 24-25) for installation of eave metal with turret shingles on curved eaves.

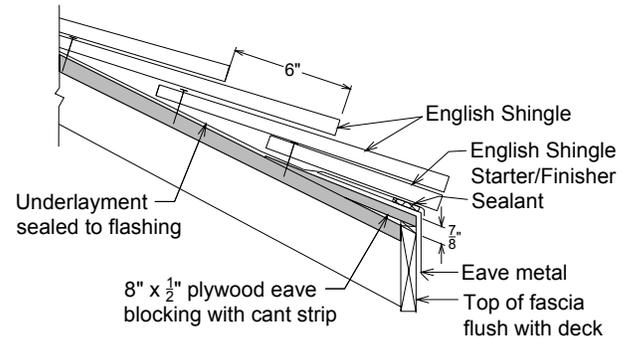


FIGURE 5. EAVE BLOCKING AND METAL WITH ENGLISH SHINGLE

3. Line all valleys using 24" girth, 16 oz. copper with a center rib. (Figure 4o) Fasten with 1" R/S nails 24" O.C. over a 36" full width vertical underlayment strip. (Figure 6) Lap joints 6" for slopes below 4:12 and 4" for slopes 4:12 & above. Do not solder. Closed valleys may be used for slopes 12:12 and above. (Figure 4n and 7)

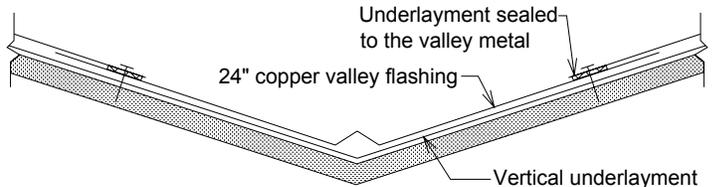


FIGURE 6. OPEN VALLEY FLASHING

4. Install step flashing between each course of shingles along all vertical surfaces. The head and side laps should be a minimum of 4" and extend 5" up the vertical. If counter flashing is not used, a vapor barrier extending over the flashing should be used behind the siding. (Figure 8)

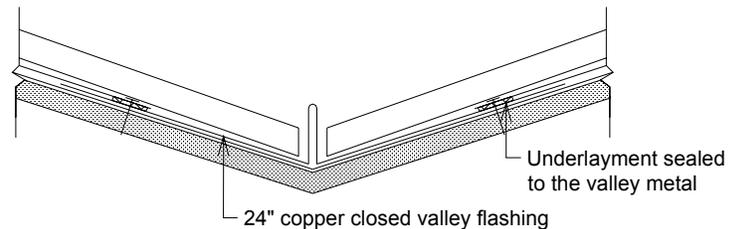


FIGURE 7. CLOSED VALLEY FLASHING

5. At the front of dormers, chimneys and other headwalls, extend angle flashing at least 3" up walls and 3" over shingles with $\frac{1}{2}$ " hem for stiffness. Counter flash as necessary. (Figure 9)

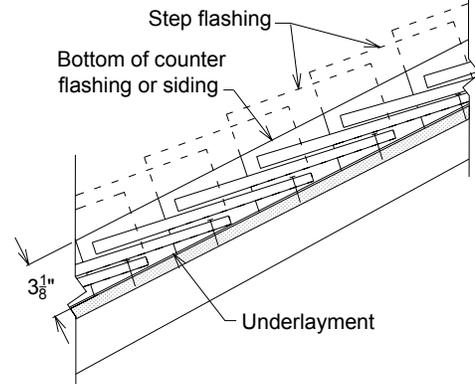


FIGURE 8. STEP FLASHING AT SIDEWALL

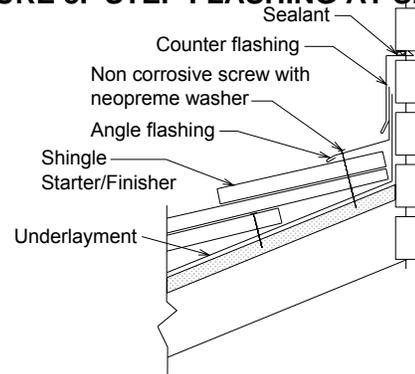


FIGURE 9. ANGLE FLASHING

6. Protrusions no more than 30" wide can utilize a flat saddle flashing. (Figure 10) Protrusions over 30" wide require a framed saddle/cricket and must be lined with 16 oz. copper extending up sloped roofs not less than 12" and up vertical walls not less than 5". (Figure 11) Counter flash as necessary.

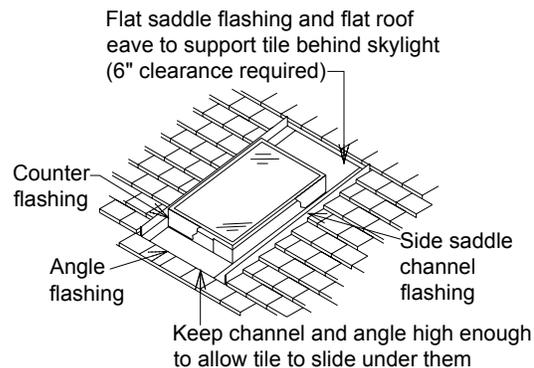


FIGURE 10 . SKYLIGHT FLASHINGS

7. All counter flashing is to be plugged, pointed and made secure.

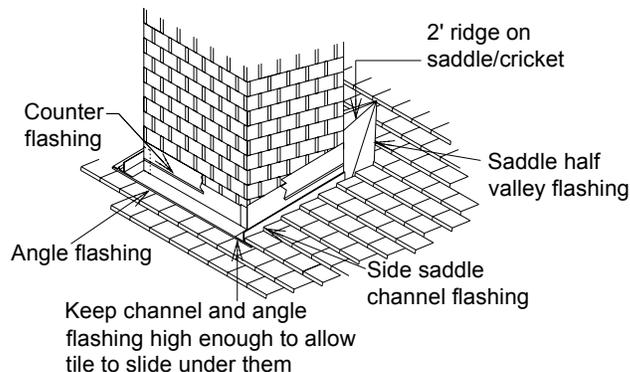


FIGURE 11. CHIMNEY FLASHINGS

8. Install the gable flashing along gables. Lap flashings a minimum of 4". Do not nail through the flashing to fasten small shingle pieces. Use copper wire and adhesive. (Figure 12) A standard "D" edge flashing can be used if the step openings along the edge are filled with grout. Oxide is available to color grout to match the shingles.

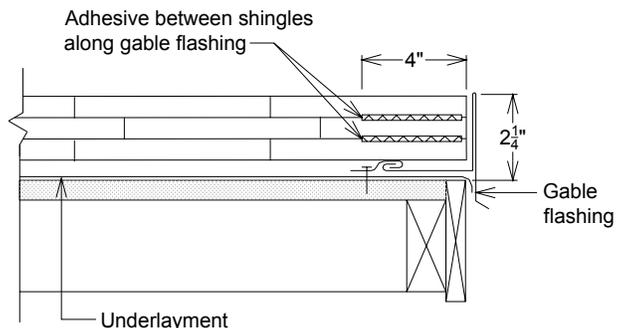


FIGURE 12. GABLE FLASHING

9. Install cap flashing where the top row of shingles meets a flat roof. Dimensions of cap flashing will vary depending on the slope. The flashing should extend at least 3" over the tile and onto the flat roof. Field measure for exact dimensions. (Figure 13) A gravel stop or curb along the perimeter and pitching the deck to an internal drain can be used to prevent concentrated water run-off. Openings in the gravel stop or curb should be left at the top of the valleys or on the back side of the roof when using an internal drain is not practical. Shop drawings available upon request.

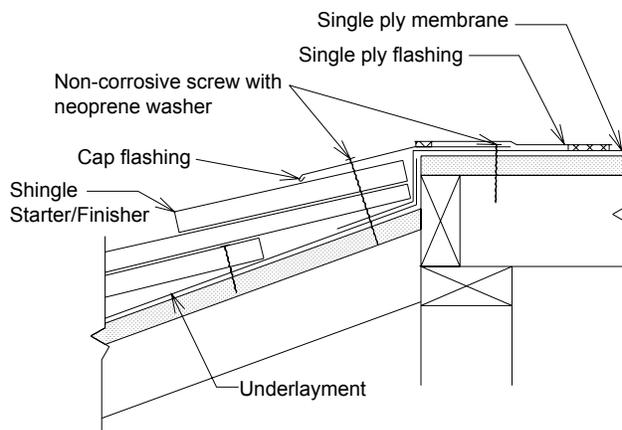


FIGURE 13. CAP FLASHING AT FLAT ROOF

10. Apply underlayment (Paragraph 22 E) with standard 3" lap laid parallel to eaves and ridge. Nail all horizontal seams one inch from the edge with 11 gauge, $\frac{7}{8}$ " long with $\frac{3}{8}$ " round head corrosive resistant nails 6" O.C. Lap all vertical seams a minimum of 6", seal with sealant and nail all vertical seams 3" O.C. Extend underlayment $\frac{1}{4}$ " over the face of the eave metal (Figure 3f), to within 1" of outside valley rib and sealed to the metal, half way up the flashing on the wall of headwalls and sidewalls, 2" over gable fascia and 6" over ridges and hips, thereby providing a double layer on ridges and hips. Check local building codes if self seal membrane is required along eaves, walls, gables, valleys, and protrusions. For roof slopes below 3:12 in the sun belt and 4:12 in severe weather areas, single ply EPDM over vertical battens should be used as underlayment. The roof deck shall be clean, smooth and dry when underlayment is applied. Remember the underlayment and flashings provide the weather proofing for the tile roof system. The building should be water tight before the tile are installed. **Do not use a slap stapler to install the underlayment or button/cap nails when installing battens.** Underlayment must be rolled out and loose laid. **Do not stretch before nailing.**

11. The hip and ridge nailer should be of sufficient height for the head of all trim to rest on the nailer with minimum space above the shingle and allow for a smooth appearance. Height of the nailer will vary depending on the roof slope, type of hip/ridge trim or flashing used and how the plywood is installed at the hip. (Figures 15-16)

12. Horizontal and vertical lines shall be chalked on the underlayment to guide application of the shingles and to obtain an installation that is weather tight and has a good architectural appearance. Spacing of chalk lines shall be determined by dividing the space between the top of the starter shingle (after installed with the desired eave overhang, approximately $\frac{3}{4}$ ") and the ridge nailer in equal amounts not to exceed 6". Vertical lines should be used as a guide if shingles are to be laid in half joint pattern. Verify spacing for the vertical lines by laying out 16 shingles, with $\frac{1}{8}$ " space between them, measuring the total width and dividing by 2. When installing the shingles, the edge of every 8th shingle in every odd number row should land on the line. The shingles in even numbered rows should be centered above the joint of the shingles below.

13. Randomly select the shingles from several pallets as they are installed to get a good color blend across the entire roof.

14. Shingles can be laid from either direction. Installers should work from the side installing about 8 shingles per row working from the eave to the ridge being careful not to walk or rest scaffold brackets directly on the shingles. (Figure 14) Roof pads are available for areas where roof access is required after shingles are installed or to support roof brackets.

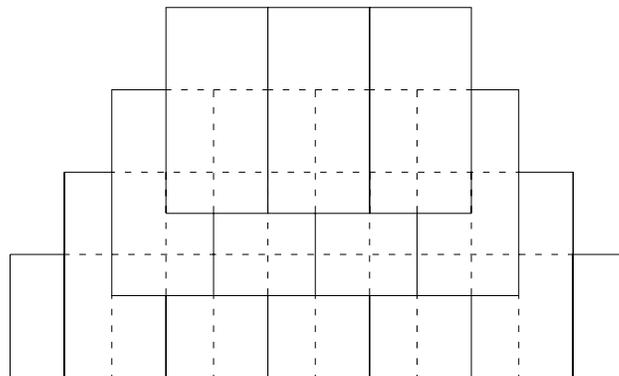


FIGURE 14. LAYOUT OF ENGLISH SHINGLES – TOP VIEW

15. Install Starter/Finisher shingles along the ridge by drilling holes through the top row of regular tile in alignment with the holes in the finisher tiles. Add a dab of adhesive between the pieces for added wind protection. Snow guards (Figure 4L) are used in snow areas to prevent glacier type snow and ice slides. They are installed as tile are laid in areas above lower roofs, entries, walkways and driveways as specified for pedestrian/vehicular safety. Decorative models, snow fences and shop drawings with laying patterns are available upon request.
16. Hip and ridge trim shall be installed as roof progresses. Ridge and hip trim are laid with 17" exposure and must be sealed between the laps with adhesive. (Figures 15-16) Miter cut the hip and ridge trim to provide proper fit. Install copper or lead flashing under Hip/Ridge trim and over the shingles at the apex.

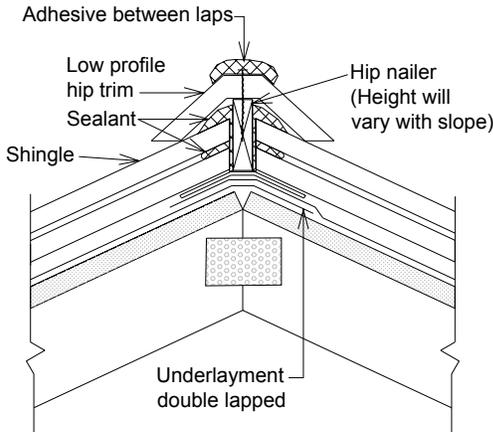


FIGURE 15. HIP

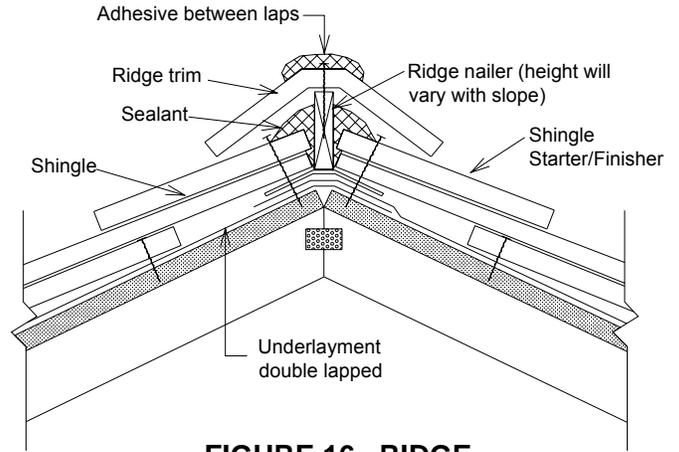


FIGURE 16. RIDGE

17. Shingles at hips must be cut to fit tight to the hip nailer. Open valleys are recommended on slopes below 12:12 and in wooded areas. Along the valley cut shingles to increase the space at the center a minimum of $\frac{1}{8}$ " per foot from top to bottom. Use copper wire and adhesive to hold small pieces in place. Don't nail through valley metal. Grout openings between the shingles and valley metal. A special grout mixture and colored oxide is available to color grout to match shingles. The valley metal exposure should be increased $\frac{1}{8}$ " per foot from top to bottom. Use 24" girth valley metal for 0-30' valleys, 28" girth for 31-60' valleys and 30" girth for 61-90' valleys. (Figures 17-18)

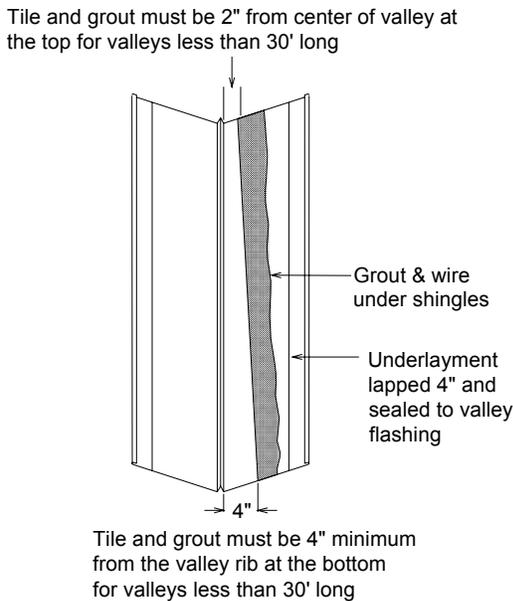


FIGURE 17. OPEN VALLEY – TOP VIEW

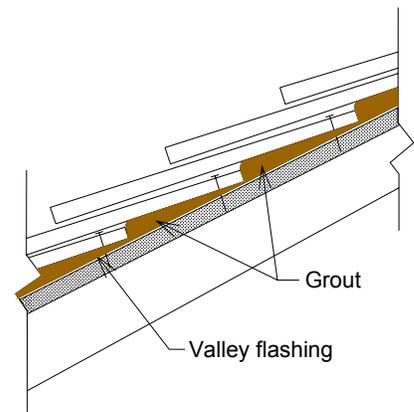


FIGURE 18. OPEN VALLEY – SIDE VIEW

18. Prefabricated ridge vent with ridge trim or copper ridge cap is available from the manufacturer. (Figures 19-20)

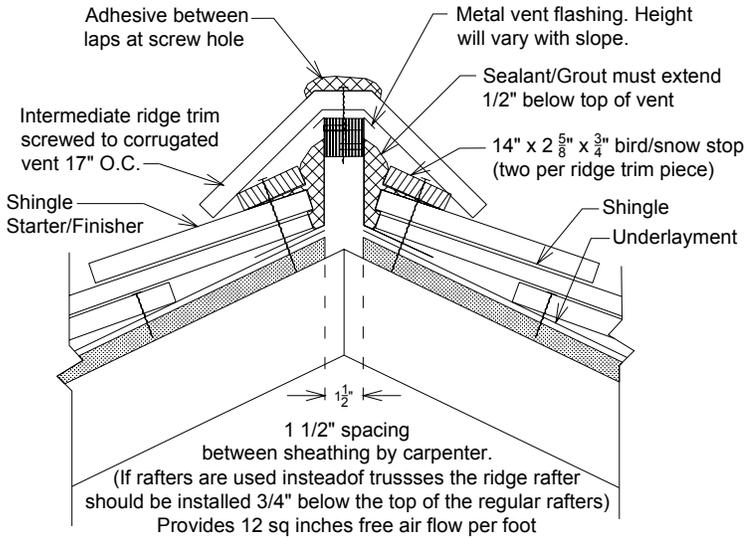


FIGURE 19. CONTINUOUS RIDGE VENTING WITH RIDGE TRIM

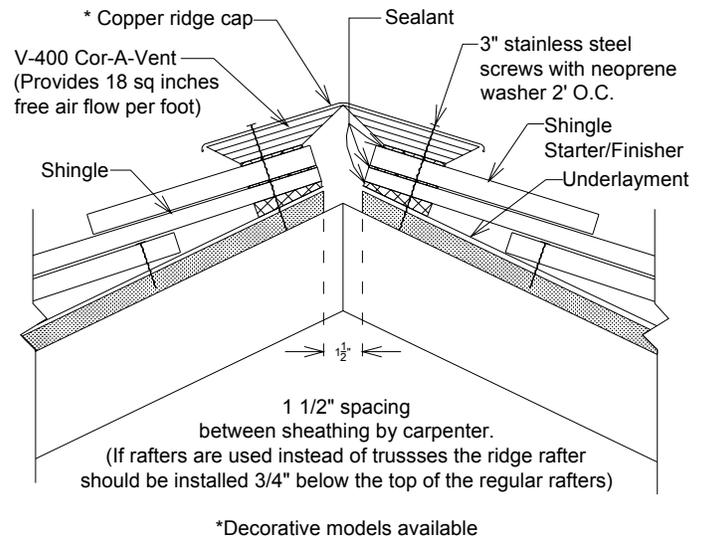


FIGURE 20. CONTINUOUS RIDGE VENTING WITH METAL RIDGE FLASHING

19. English shingles can be installed on vertical surfaces such as the fronts and sides of dormers. (Figures 21-23)

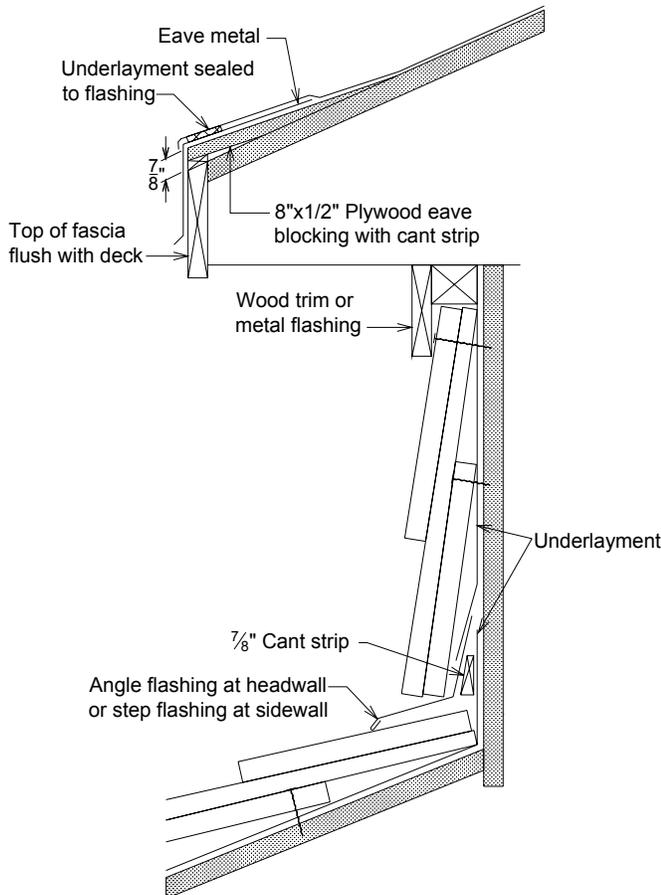


FIGURE 22. SHINGLES ON FRONT AND SIDES OF DORMER

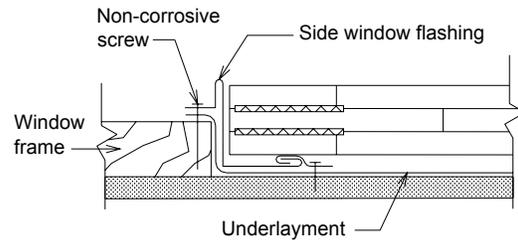


FIGURE 21. FLASHING AT SIDE OF WINDOW ON DORMER

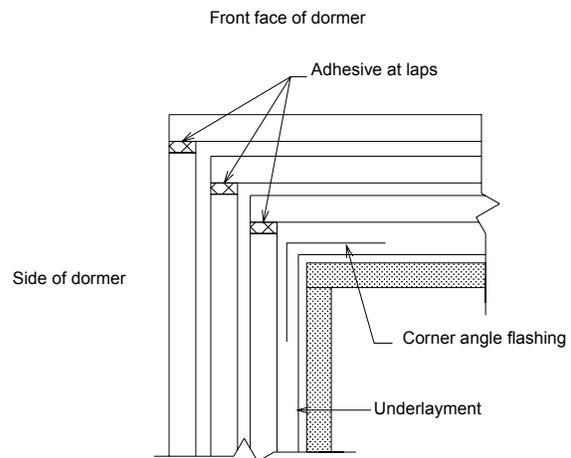


FIGURE 23. FLASHING AT OUTSIDE CORNER

SECTION 2: SEQUENCE OF INSTALLTION PROCEDURES FOR SHINGLES

20. Eave metal for turrets is fabricated in the field using a 1" X 1½" drip eave and 15½" flat stock copper. Fit the drip eave to the curve of the fascia by running the 1" side through a metal shrinker or by cutting numerous tabs. Use 1" R/S copper nails to nail the drip eave to the top of the fascia that is raised 1¼" above the roof deck. (Figure 25) Field cut 2, 3, or 4 pieces from 10 foot lengths of the 15½" flat stock eave flashing as required to accommodate the curve at the eave. Copper must extend approximately 8" up the roof to the back of the turret shingle starter. Scribe and snip eave flashing to fit the curve of fascia. Position copper eave flashing ¼" from front edge of drip eave. Nail with 1" R/S copper nails and solder. (Figure 24-25)

21. Install self seal membrane underlayment in 3'-6' lengths starting at bottom, lapping the eave metal at least 4 inches. Install starter shingle with a ¾" overhang at the eave. Use SS screws instead of copper nails for high wind conditions. Check the computer print out for proper size shingle to use on each row. A line can be scribed up the slope every 6" above the starter using a pencil attached to a string fastened at the Apex or use a 6" spacer off the top of each row below. Align the vertical edge of each shingle near the center of the shingle below. Mix sizes of shingles as necessary to maintain the offset and alignment as you work up the slope. (Figures 25-26) Install the appropriate funnel flashing at the top. Minimal cutting and re-drilling nail holes will be required if you mix and match the sizes shown on the computer printout. (Figure 2)

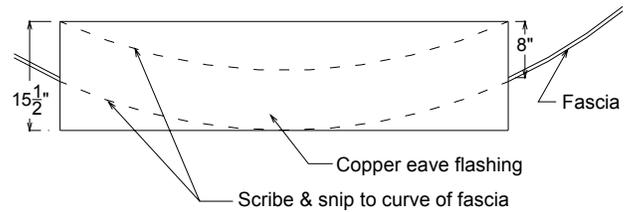


FIGURE 24. EAVE METAL WITH TURRET SHINGLES ON CURVED EAVES – TOP VIEW

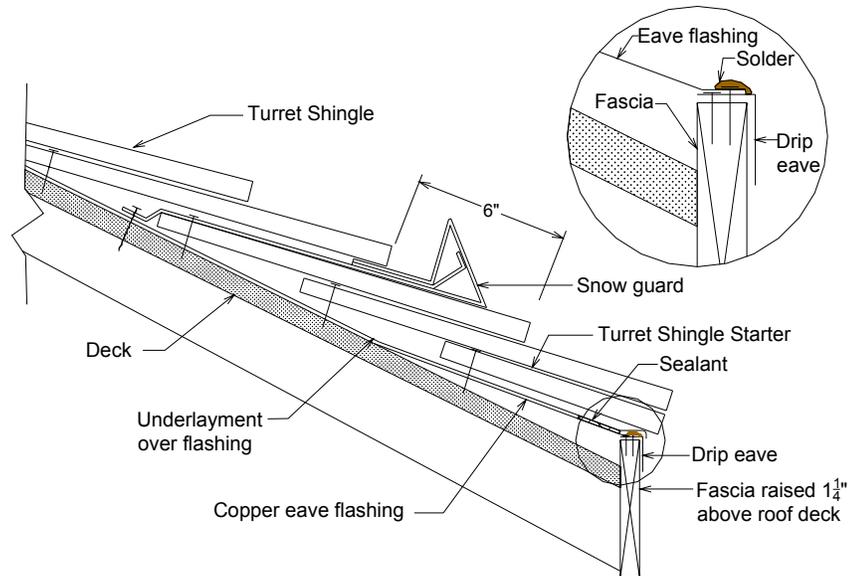


FIGURE 25. EAVE METAL WITH TURRET SHINGLES ON CURVED EAVES – SIDE VIEW

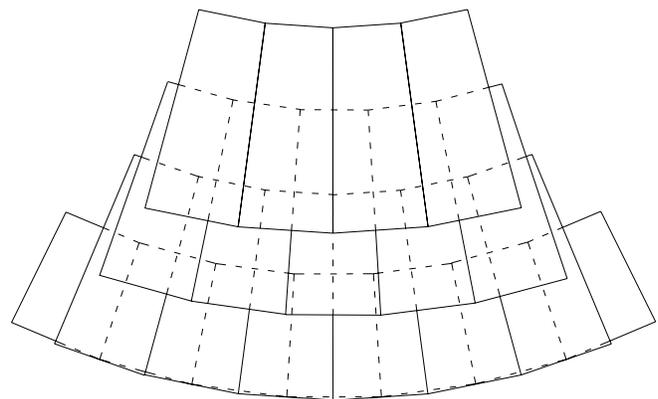


FIGURE 26. LAYOUT OF TURRET SHINGLES – TOP VIEW

22. Sealant, Mortar, Grout, Adhesives and Underlayment

- A. Concealed sealants along ridge/hip trim and flashings shall be non-running, heavy body plastic roof cement to meet or exceed the requirements of ASTM D-2822-75 and Federal Specifications SS-S-153C (Type 1). Colored mortar/grout is used along open valleys and "D" edge gable flashing.
- B. Exposed sealants, such as those used on counter flashings, should be high quality sealants to meet or exceed requirements of U.S. TT-S-00230C, U.S. Fed Cat. No 8030-965-2397, Canadian 19-GP-5M ASTM C290-79.
- C. Mortar/grout for open valleys/gables shall be 50/120 lb mix of Surface Bonding Cement/Mason Mix to meet or exceed strength requirements of ASTM C-387 for Type "N" mortar and Concrete Acrylic Fortifier to meet or exceed ASTM C-887 standard specifications. Grout and colored oxide to match field tile available from the Manufacturer.
- D. Adhesives to secure cut pieces of field tile along hips, valleys, sidewalls, gables, and protrusions and to install hip/ridge trim shall be high quality adhesives to meet or exceed requirements of U.S. TT-S-00230C, U.S. Fed Cat. No 8030-965-2397, Canadian 19-GP-5M ASTM C290-79.
- E. Approved underlayments:
 - 1. For roof slopes 3:12 and above in the sun belt and 4:12 and above in severe weather areas:
 - a. Two layers of No. 30 Asphalt Saturated Organic Felt, to meet requirements of ASTM D-226, Type 2 or equal.
 - 2. Use self seal membranes that meet or exceed requirements of ICBO AC48 along roof perimeters and protrusions in severe weather areas.

23. Fasteners

- A. Fasten underlayment with $\frac{7}{8}$ " large head galvanized nails.
- B. All shingles shall be nailed with 11 gauge $1\frac{3}{4}$ " R/S non-corrosive nails (copper, hot dipped galvanized or stainless steel) through the 1 or 2 nail holes provided to penetrate sheathing at least $\frac{3}{4}$ ".
- C. On slopes 18:12 and above or in high wind areas use non-corrosive screws instead of nails.
- D. Nails for trim pieces shall be 10 gauge (copper, hot dipped galvanized or stainless steel) $2\frac{1}{2}$ " long to penetrate into wood nailers. For slopes 18:12 and above or high wind areas use non-corrosive screws instead of nails.

Architectural Specifications

- A. Shingles shall be _____ (turret; English) style, _____ color (over 60 standard or custom colors) with _____ (smooth; brushed; shake; Cotswold; custom) surface.
- B. Hip trim shall be _____ (regular; low profile).
- C. Ridge shall be _____ (vented; non-vented) with ridge trim or cap flashing.