Oxford Shingle

Classic Metal Roofing Systems

Installation Instructions

The Best Roofs Under the Sun ™

ISAIAH INDUSTRIES

CLASSIC METAL ROOFING SYSTEMS

Oxford Shingle
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Suggested Tools

Below are some of the tools pictured that may be necessary or helpful for the installation of a Classic Metal Roofing Systems or Kassel and Irons metal roof.

- ⇒ Tool bag
- ⇒ Tool belt
- ⇒ Soft brush
- ⇒ Framing square
- ⇒ Appropriate fasteners
- ⇒ Plastic cap nails
- ⇒ Nailing clips
- ⇒ Hammer with rubber end
- ⇒ Wonder bar
- ⇒ Nail puller
- ⇒ Zip tool
- ⇒ Combination square
- ⇒ Screw drivers
- ⇒ Caulking gun
- ⇒ Protective caps
- ⇒ Chalk lines
- ⇒ Sliding T bevel
- ⇒ Utility knife
- ⇒ Rivet gun and rivets
- ⇒ Tape measure
- ⇒ Tin snips
- ⇒ Aviation snips
- ⇒ Cordless drill
- ⇒ Drill bits
- ⇒ Assorted hand flangers
- ⇒ Assorted markers
- ⇒ Circular saw
- ⇒ Extension cord
- ⇒ Roof jacks
- ⇒ Safety glasses
- ⇒ Gloves
- ⇒ 2’ portable brake
- ⇒ 8 or 10’ brake
- ⇒ Ladders
- ⇒ Scaffolding
- ⇒ Fall protection
- ⇒ Not pictured: Folding tools/bars with 3/8” and 1” channels

Always use cardboard or a soft surface when working on painted pieces.
Additional tools will be needed to tear off of an existing roof.

Fig. 1

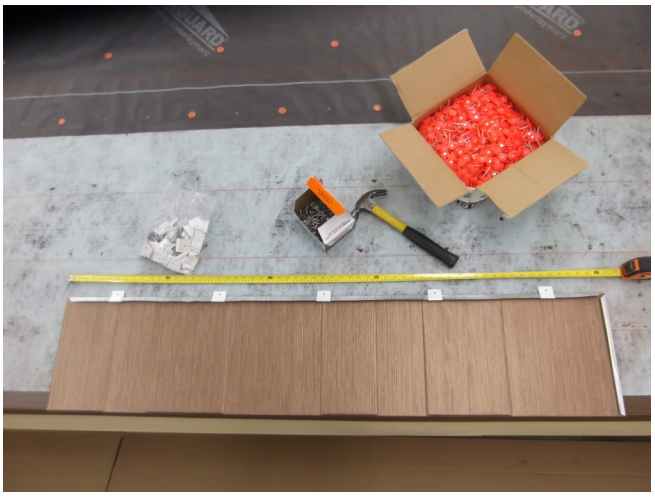

Fig. 2

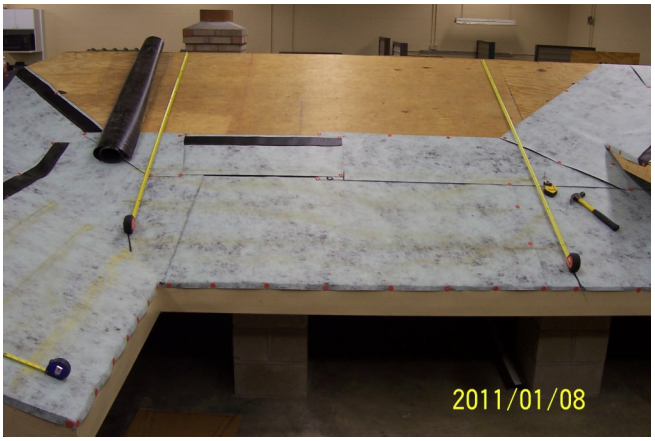

Fig. 3

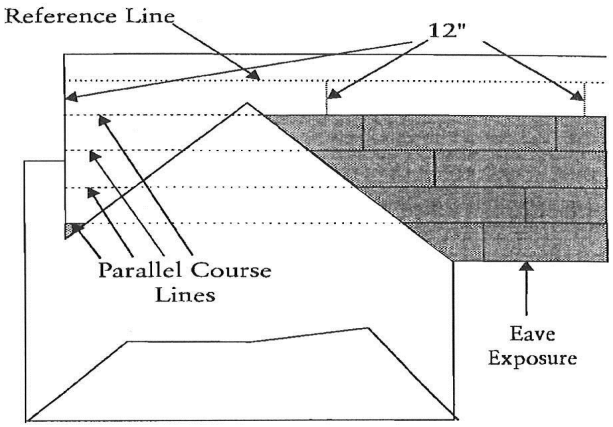

Fig. 4

General Installation Instructions

Use only aluminum ring shank nails or stainless steel screws. Fasteners should be long enough to fully penetrate sheathing or at least 1" into solid lumber. Oxford shingles are 5' long, attach with 5 nailing clips and interlock on all four sides **(Fig.2).**

When installing lineal pieces other than the Starter Strip, fasten with a clip every 12" O.C. on the return flange. Do not penetrate the water return channels of any of the lineals except for one or two fasteners at the upslope end to prevent slippage during and after installation. Do not flatten water return flanges.

Uphill flashings should nest inside or overlap downhill flashings by at least 1-1/2" and be sealed with color-matching or clear sealant . Lap valley lengths at least 3" and seal.

Use only the accessories designed for use with the panel. Do not install accessories of dissimilar metal with this system. To protect against moisture problems and/or decay, insulate the product from contact with existing masonry or dissimilar metal by coating with bituminous paint or mastic, or by separating with roofing underlayment.

Take care not to scratch the panel's surface. Touch up paint should be neatly applied to minor scratches with a cotton swab or artist's brush. Do not walk on the panel's bottom or side locks. Work from above the panels whenever possible.

Roof Layout: Before beginning panel application, lay out work to minimize cutting and waste. This can be especially useful in avoiding bending or cutting small, difficult pieces, such as when approaching or leaving a valley or hip. **Chalk lines parallel to the ridge to ensure that courses remain straight and meet at the top of protrusions such as dormers (Figs.3 & 4– very important!).**

General Installation cont.

Fig. 1


Fig. 2


Fig. 3


Fig. 4

Regular Installation Sequence:

1. Prepare deck and apply underlayment
2. Eave Starter Strip
3. Gable Channel
4. Valley Flashing
5. Sidewall Flashing
6. Shingles
7. Hip
8. Chimney Flashing
9. Vent Pipe Flashing
10. Ridge

Safety Considerations: Caution must be exercised when using ladders. Position the ladder to extend at least 36" above the point of support, with the base at an angle so that the horizontal distance from the foot of the ladder to the building is about 1/4 the working length of the ladder. The ladder should be secured to a permanent part of the roof to ensure safety. Inspect for damaged rungs and examine the locking system.

Upon reaching the roof, inspect it for working hazards. Note the presence of loose roofing or weakened substrate, protrusions such as pipe flashings, electrical wiring, nails, stabilizing wires, and extension cords. Look for moss growth or dampness that might make the roof slippery.

Power saws, especially on cutbacks, must be handled with extreme caution, and should be used only by experienced installers. Wear shatterproof safety glasses with side protection when using cutting tools. Cut the shingles with snips, a guillotine shear, power shear or power saw. A cardboard template can be useful in making repetitive cuts such as for valleys.

Always be aware of your position on the roof relative to your surroundings. Take note of the locations of roof openings, roof edges, equipment, tie-off ropes, co-workers, and other potential hazards. Check with local building codes and other authorities for further safety requirements.

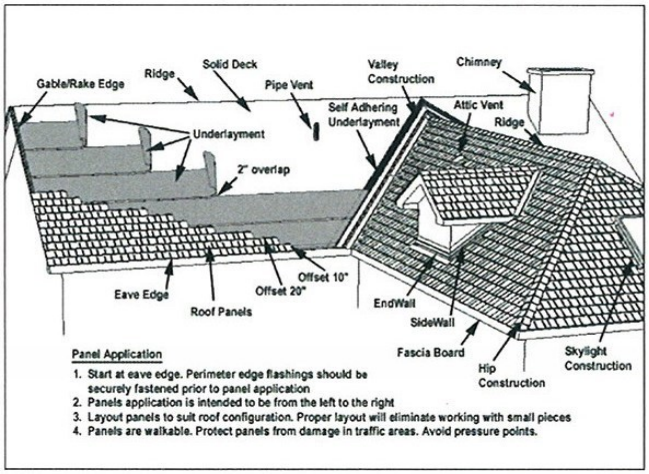

Fig. 1

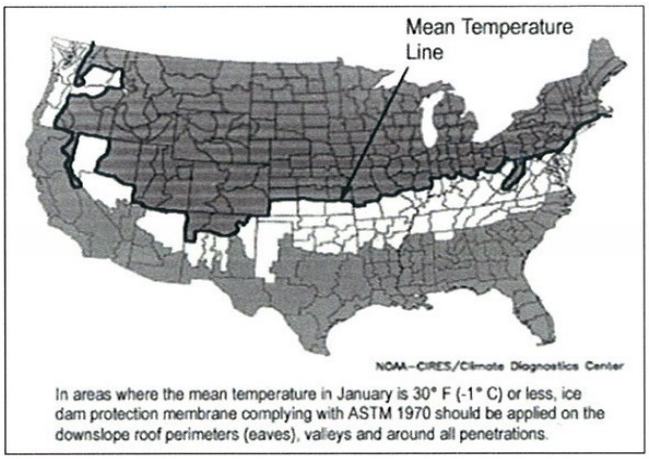

Fig. 2

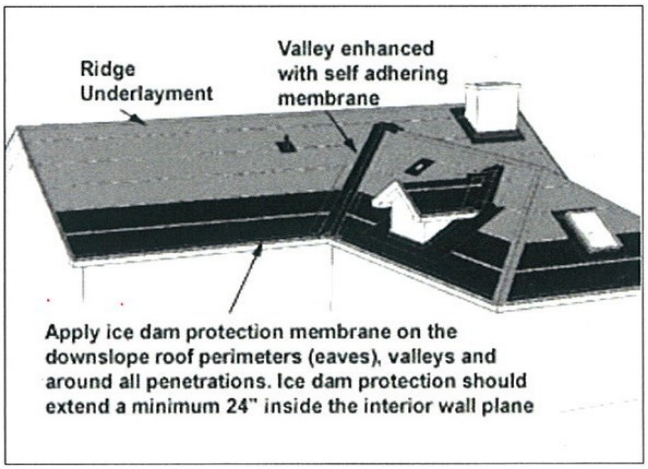

Fig. 3

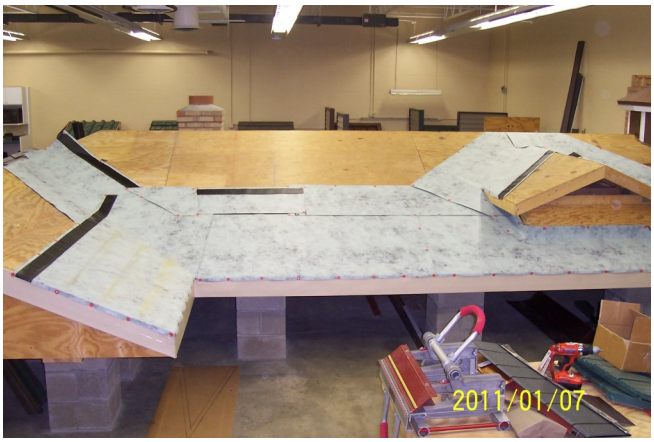

Fig. 4

Deck and Substructure Preparation

Study the diagram in **Fig.1** to be familiar with standard nomenclature for common roof features. Oxford shingles require a **minimum pitch of 3:12** for proper installation. Half-inch plywood or 15/32" OSB deck substrate is recommended for best performance. Inspect and replace any damaged decking. Adequate ventilation from eave to ridge is necessary with any type of roofing to facilitate maximum cooling in the summer and prevention of ice damming in cold winter climates.

Application over an existing asphalt roof is acceptable, if permitted by local building code. All asphalt should be trimmed flush to the eaves and gables prior to application of new edge flashings. Removal of old metal edge flashings is required. Buckled or curled shingles should be flattened to provide a level surface for shingling.

Fig.2 shows areas in the continental U.S. where the average January temperature is less than 30 degrees Fahrenheit. These areas, shaded darkest on the map, require the application of **ice and water shield** on the downslope perimeters (eaves), valleys, and around all penetrations (**Fig.3 & 4**). Be sure to check with local building codes for specific requirements. Read manufacturer's instructions for more application specifics.

Class A Fire Rating: To comply with the Florida building code Class A fire rated roof assembly, apply under the roof panels and over the underlayment, a minimum 1/2" water resistant core gypsum sheathing complying with ASTM C79, 1/4" Georgia-Pacific Dens-Deck™, Elk's Versa Shield®, or other code-specified underlayment.

Underlayment: A minimum of one layer of synthetic Roof Aqua Guard UDLX (or equivalent) or one layer of ASTM 30-pound asphalt-saturated felt is required over all roof decking not covered by ice and water shield. Secure the underlayment with 1"plastic-top nails 12" O.C. vertically and 16" O.C. horizontally. End laps must be a minimum of 6" and side laps 4". Be sure to lap each top courses of underlayment over the course below. **All perimeter edges of the roof should be overlapped by 1" onto the fascia.** Gutters should be installed **behind** the overhanging underlayment and Starter Strip.

Deck Preparation cont.

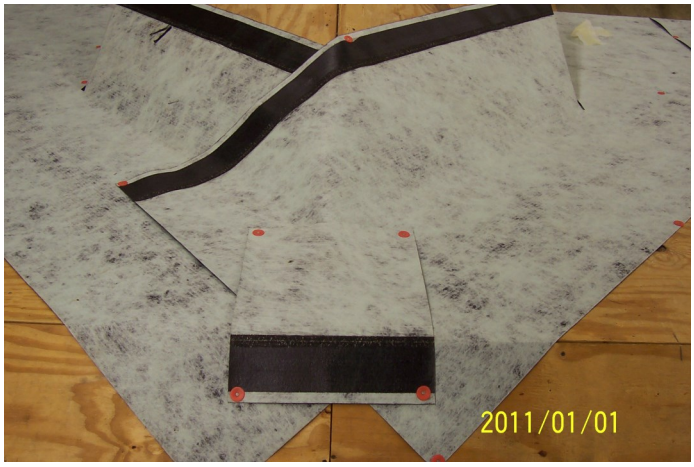

Fig. 1

Apply ice and water shield the full lengths of valleys, overlapping where valleys meet. Relief cuts should be covered with a patch (**Fig.1**). At a valley location, run the synthetic underlayment completely across so that the courses of underlayment are woven together and lap at least 8" across the center of the valley. Install this underlayment loosely in the valley to allow for a small amount of controlled shrinkage.

Note: the "peel and stick" type of self-adhering underlayment should only be applied to bare decking.

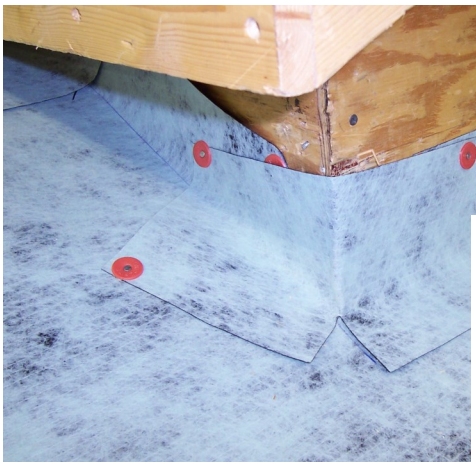
Fig. 2

Corners that require a relief cut should be patched and/or sealed (**Fig.2 & inset**).

Fig. 3

Fig. 3 pictures a chimney from above with ice and water shield properly wrapped around the sides of the chimney.

Run underlayment up the sides of all protrusions and seal appropriately (**Fig.4**).

Fig. 4

On walls, underlayment should extend 4" up the side. Lap underlayment over all ridges and cut appropriate openings for all vents when ready to cover each opening (**Fig.5**).

Fig. 5

Eave Starter Strip

Fig. 1

When installing Starter Strip (402) at the eaves, fold down and fasten 1" of overhanging underlayment, keeping it under the Eave Starter Strip. Form a 1" tab to wrap and fasten around the corner of eave/ gable intersections (**Fig.1 arrow**).

Make sure that the Strip remains straight and tight against the eave when fastening. Secure the Starter Strip by nailing it to the deck every 12" on centers as close to the cleat as possible for maximum uplift resistance.

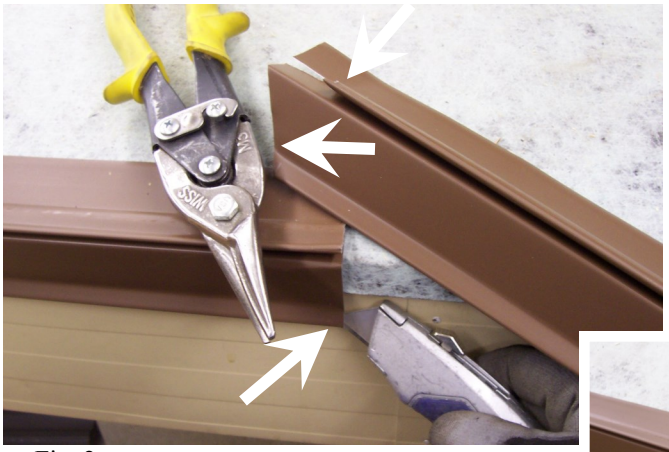

Fig. 2

Nail into rafters if the underside of the deck is exposed to view; otherwise nails will penetrate the deck and be seen from below.

When joining overlapping pieces of Starter Strip, taper back 1" of the drip leg of the piece not attached to the deck (**Fig.2 middle arrow**). Cut just over 1" of the top lock off (**top arrow**). Open up the bottom hem of the receiving piece with a utility knife (**bottom arrow**).

Note: *These procedures can be done on the ground for all starter pieces at the same time*.

Fig 3

Slid new piece <u>behind</u> the receiving piece (**Fig.3 right arrow)** but place the back tab <u>over</u> the receiving piece and nail through this overlap (**left arrow**).

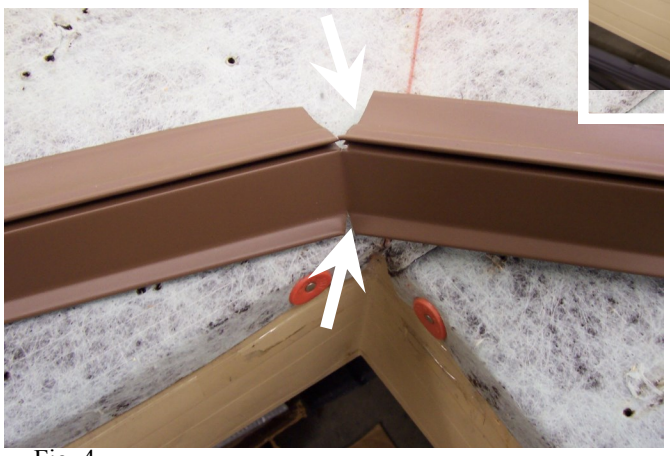

Fig. 4

At inside corners, make a "V" notch out of the drip hem and a straight cut on the nailing flange to allow the starter strip to match the 90 degree bend of the corner (**Fig.5 arrows**).

Fig. 5

At a hip line (outside corner), make a relief cut on the kick out on the drip leg (**Fig.4 bottom arrow**) and cut a triangular piece out of the top of the Starter Strip so the two sides will come together when bent around the corner (**top arrow**). Bend and fasten through the nailing flange close to the hip line.

Gable Channel

Fig. 1

Isaiah Industries' **Gable Channel** (2027) securely receives the bent-down edges of installed shingles, avoids the entrapment of debris and highlights the tapered profile of each shingle. The Gable Channel is attached with nail clips every 12" on center and one or two nails at its uphill edge to prevent slippage.

Uphill pieces should always nest inside and on top of downhill pieces. The overlap of gable lineals should be at least 1-1/2" and be sealed (see Fig.4 on next page for lapping details).

Fig. 2

Over-bending the length of the Gable Channel before installation can help the lineal to hug the gable fascia better (**Fig.1**).

As seen in **Fig.2**, about 3-1/4" of the starter strip cleat needs to be removed **(arrow)** so that the gable channel can sit flat on the deck as it extends 1/2" past the eave edge. Snip the cleat at the appropriate distance, score the top and under sides with a utility knife and work the piece back and forth to remove.

Fig. 3

A sliding T-bevel (**Fig.3**) or speed square can be used to accurately make repeated cuts based on the roof pitch. The face of the gable lineal should be plumb cut in line with the edge of the starter strip (**bottom arrow**). The **top arrow** points to the cut line for the 1/2" extension.

Note: Cutting several profiles like this at a time can often be done most efficiently on the ground and then simply be set in place.

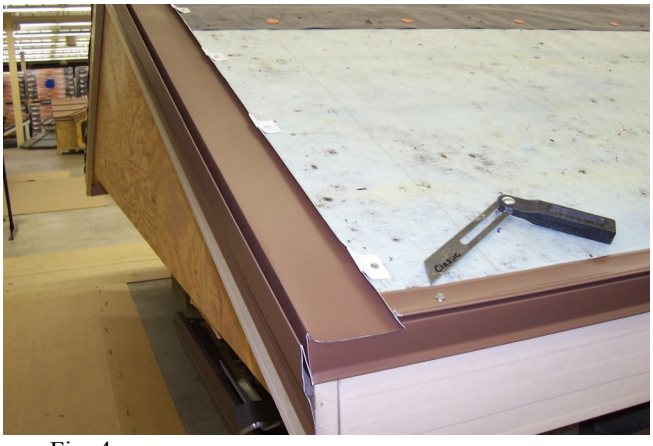

Fig. 4

Fig.4 shows the lower end of a properly cut and installed gable channel. Secure all lineals to the deck with nail clips every 12" O.C. Shingles bent down into the channel of the lineal will provide needed hold-down pressure. Trim nails can be neatly fastened every 4' or so in the gable face if additional wind uplift resistance is required. Make sure the nails are equally spaced for best appearance.

Gable Channel cont.

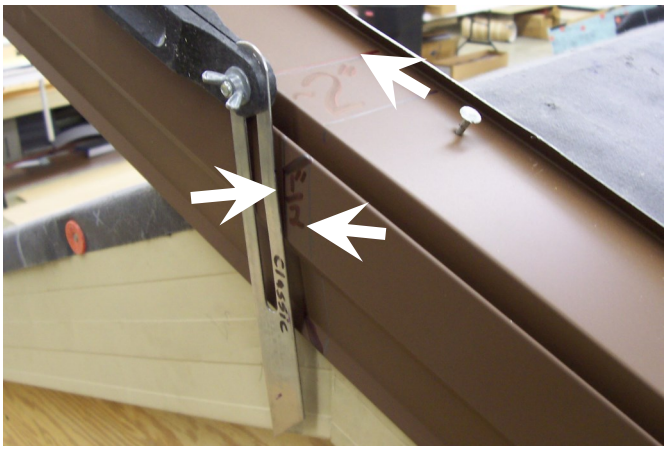

Fig. 1

Install Gable Channel up the length of the gable. If only one lineal is required, it will need to be temporarily put in place with 1/2" overhanging at the eave to make a precise centerline mark at the ridge. If two or more lineals are required, formation of the ridge end of the lineal can be made on the ground without knowing the precise length needed because the amount of overlap at the joint can be adjusted up to an inch or so (about 1-1/2" of overlap is ideal).

As seen in **Fig.1**, mark a plumb line on the face of the lineal that represents the centerline of the peak (**right arrow**). Draw a second line 1/2" beyond the centerline (**left arrow**). On the top of the lineal leave 2" of extra material to be folded over the ridge line (**top arrow**). Remove lineal to make cuts.

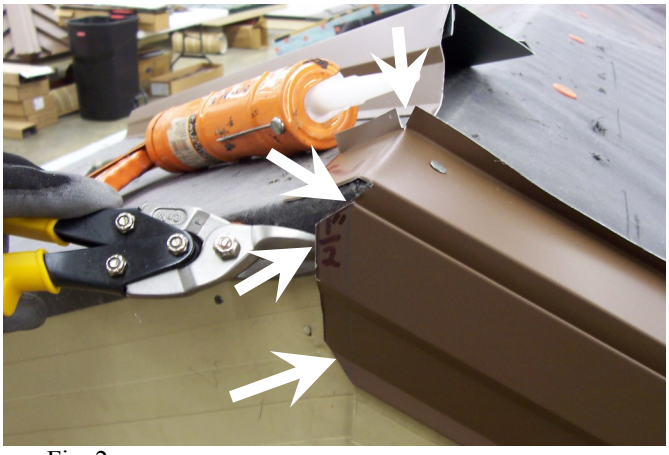

Fig. 2

Cut the profile as seen in **Fig.2**. Both the **bottom** and **top-middle arrows** point to taper cuts that meet the centerline. The pictured snips are cutting the bottom of the receiving channel back about 1" so that the lineal coming in from the other side of the ridge can nest properly (**lower-middle arrow**). Snip the nailing flange (**top arrow**), fasten the centered lineal to the deck and seal the nail head.

Fig. 3

Make a plumb cut at the ridgeline in the face of the second lineal (**Fig.3 top arrow**) and allow 2" of material on top to lap over the ridge. Open up the bottom hem of the second lineal and nest the two channels and drip hems together (**bottom arrow).** Crimp the second hem over the first. Nail the nested, folded-over tab to the deck near the ridge and seal.

When lapping gable lineals, open up and wrap bottom hem of the top piece (**Fig.4 left arrow**) over the bottom, tapered-cut piece (**right arrow**) for a finished appearance. Open up the nailing hem of the bottom piece to receive the top hem (**top arrow**) and then wrap back in place.

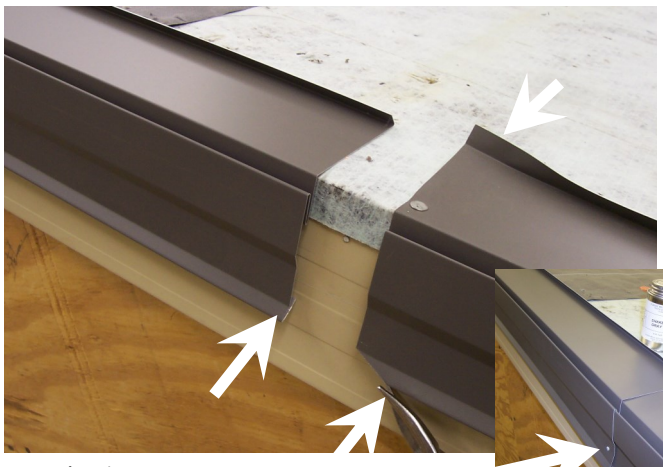

Fig. 4

A trim nail can be used to hold the lap to the gable if desired (**inset photo arrow**). Apply touch up paint with a cotton swab to color match nail heads.

Shingle Installation

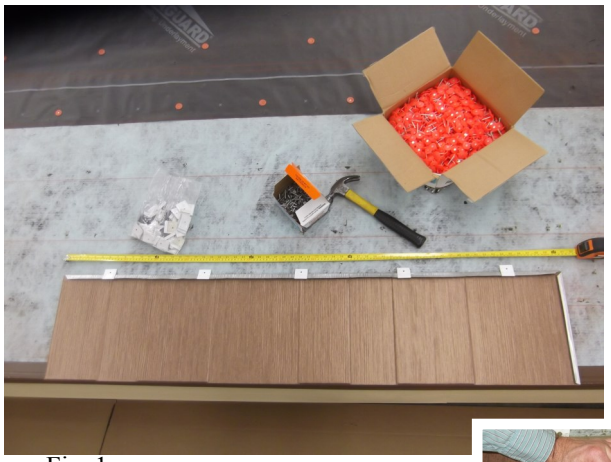

Fig. 1

Before panel application, lay out work to minimize cutting and waste (e.g. shifting the whole stagger pattern to the right or left to avoid crossing a side lock at a valley bend.) Oxford shingles (2001) are installed left to right, eave to ridge. Make sure all clippings and abrasive materials are swept from the material immediately to prevent scratching.

The bottom edge of the first course of panels hooks on to the Starter Strip. Subsequent panels interlock by sliding the new shingle up and to the right. Be careful not to scratch panels when locking them together. **It is imperative that shingles be fully locked on all four sides.** Tapping butts firmly with the rubber end of a hammer and side locks with a wood block **(inset)** is recommended. Attach each panel with five (5) nailing clips and aluminum or stainless steel ring shank nails or screws as seen in **Figure 1**.

Fig. 2

Each panel course will have a vertical exposure of 12". **Snapping horizontal lines every two or three courses is recommended to ensure proper panel position and is critical in making sure panels meet at the top of protrusions such as dormers.** Alignment can get distorted going in and out of valleys if not monitored.

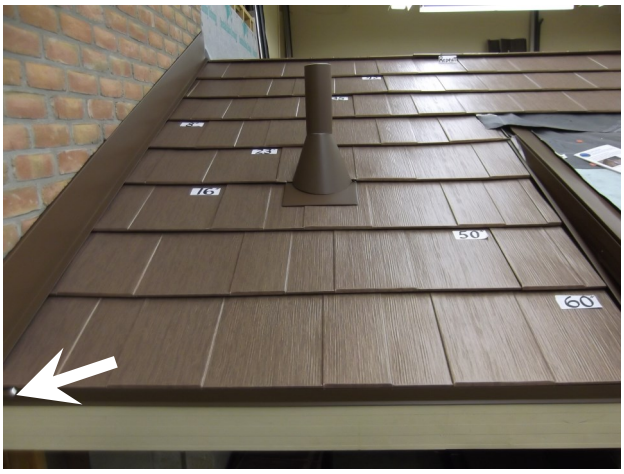

Fig. 3

Figs.2 & 3 show an Oxford stagger pattern used to produce a random appearance. (**Note**: **Panels to the right are removed for illustration in Fig.2.**) The first course begins at the left edge of the roof with a full 60" panel. Figure 2 pictures an Oxford stagger pattern consisting of a 7-course repeat with the following measurements: 60, 50, 16, 23, 8, 35, 42, repeat pattern.

A 1/8" high drain slot must be cut in all first course shingle butts where they cross water return channels at gables, sidewalls and valleys **(Fig.3 arrow).**

Fig. 4

In order to avoid crossing a valley hem along the side lock **(Fig.4, right arrow)** of a shingle, a short shingle can easily be fabricated. In **figure 4** a 5/8" right side lock has been formed with a bending tool or brake and will lock into the next shingle **(left arrow).**

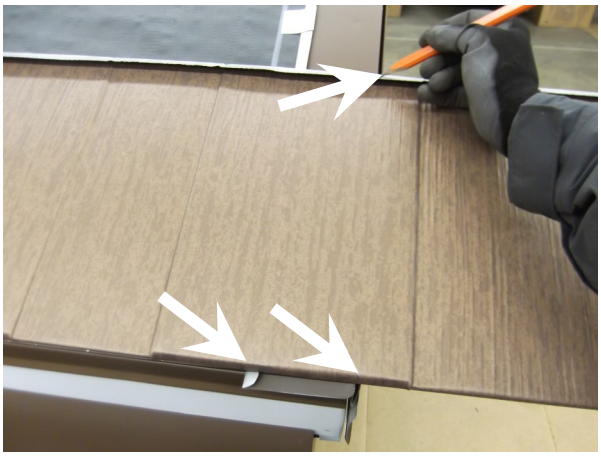

Fig. 1

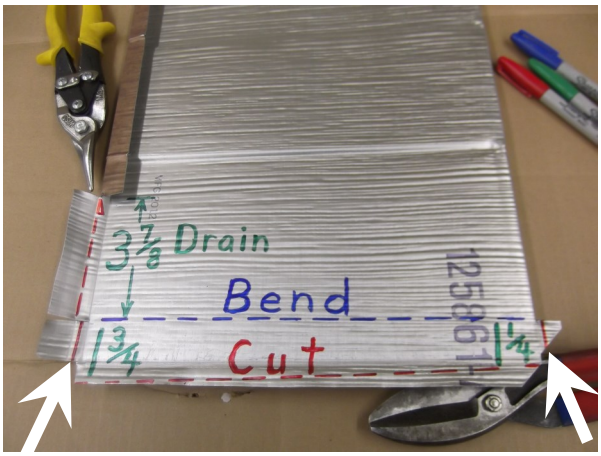

Fig. 2

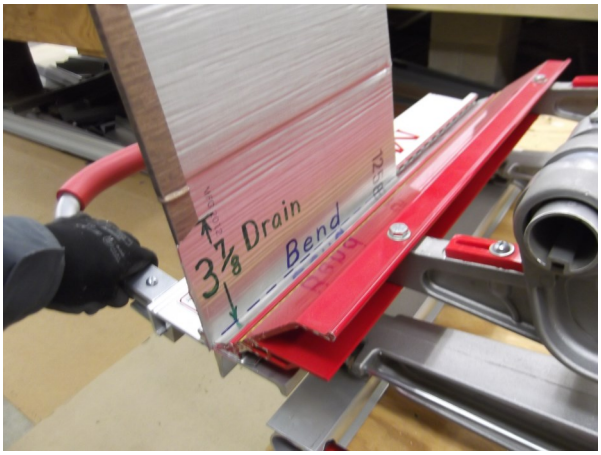

Fig. 3

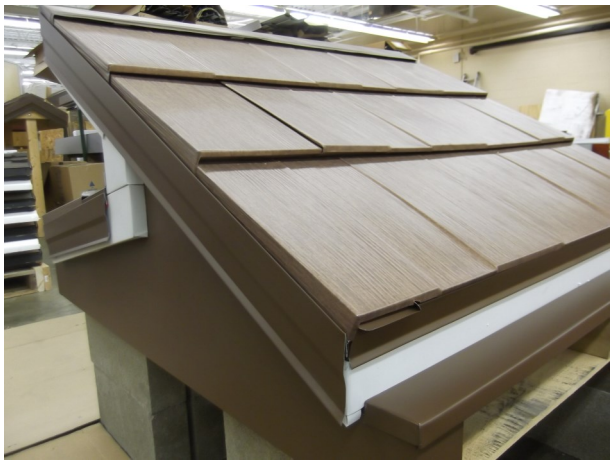

Fig. 4

Panels into Gable Channel

When installing Oxford shingles into the 2027 Gable Channel, mark the shingle at the butt and at the top lock where the shingle crosses over the Gable Channel, as well as the edge of the water return channel (**Fig.1 arrows & Illus.1**). This will be the bend line.

Note: *All panels for **left** gables (as seen from the ground) can be bent on the ground (in accord with the proper stagger pattern) without first physically putting them in place. A square can be used to make sure the bend line is at a right angle to the shingle butt. Figure 1 shows a panel at the **right** gable.*

Next, mark the shingle 1-3/4" past the channel at the butt and 1 1/4" at the top lock. This will be the cut line (**Fig.2**).

Cut the bottom and top locks and bend them open as seen in **Fig.2 and Illus.2**. Cut off these tabs leaving1/8" of material past the bottom and top locks of the shingle **(arrows)**. Cut the shingle along the taper line seen in **Figure 2**. For the first course only, cut a drain slot the width of the water return channel (about 3-7/8") but only about 1/8" high to prevent insect infiltration. The water return channel should protrude 1/2" through this opening.

With a brake or wide hand flangers, bend the shingle down 90 degrees to form a side lock.(**Fig.3**). Insert the side lock into the groove of the Gable Channel as the shingle is locked into place (**Illus.4**). The hem on the water return leg of the Gable Channel may be depressed slightly to enable the shingle to sit flat but do **not** flatten completely.

Figure 4 displays a properly installed and aesthetically pleasing gable detail.

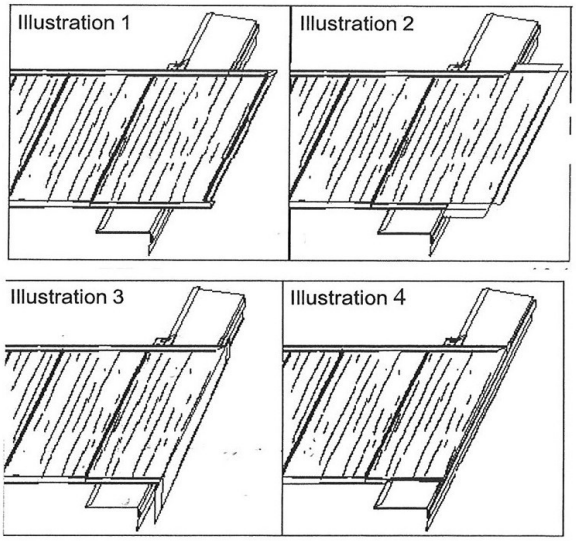

Fig. 1

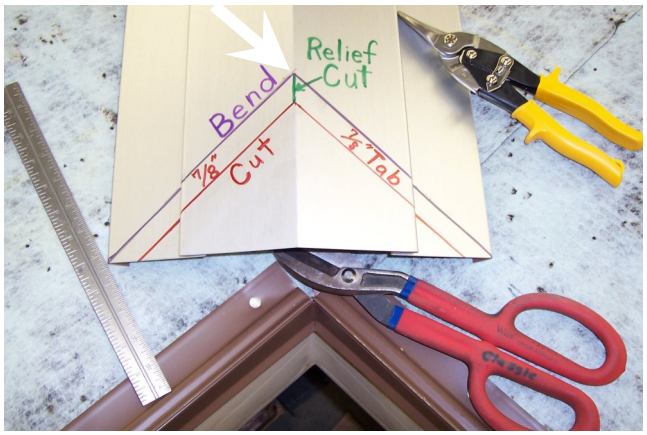

Fig. 2

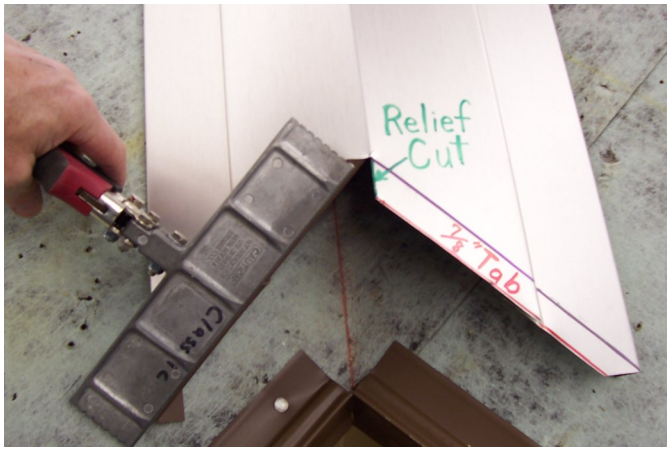

Fig. 3

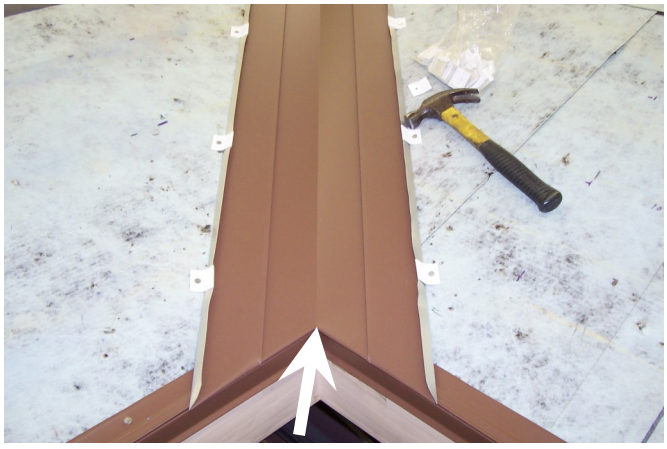

Fig. 4

Simple Valley

Oxford Valleys (2025) have a subtle taper to facilitate nesting pieces on long valleys. Make sure that the wide end labeled "Top of Part" is upslope so that the upper Valley piece can nest inside the lower piece (**Fig.1 inset**).

Center the valley flashing in the valley. For long valley runs it may be helpful to chalk a center line to keep the pieces aligned. The corners on both sides of the Valley should be even with the edge of the Starter.

Mark the underside of the Valley the full length where it runs along the Starter Strip (**Fig.1 arrow**). This will be the bend line to form tabs to lock into the starter strip.

Carefully turn the Valley over and cut the Valley along a parallel line, 7/8" further toward the end. Make a relief cut from the cut line to the bend line (**Fig.2 arrow**).

Using wide hand flangers, bend the locking tabs back about 170 degrees (**Fig.3**). These tabs will lock into the Starter Strip.

Carefully turn the Valley back over, center it on the chalk line, and push it up, fully engaging it on to the Starter Strip. Secure it to the deck with nail clips spaced every 12" O.C. (**Fig.4**).

Two nails can be driven through the **top outside edges only** of the water return channel to prevent slippage. Seal these nail heads. If the Valley piece extends to the ridge, cut it 2" past the ridge and drive two nails through this fold-over.

If more than one Valley length is required, the uphill section must overlap the lower section by at least 3". Apply ample sealant between pieces. Sealant **must** be applied to the gap that will occur at the **arrow** in **Figure 4**.

Intersecting Valleys

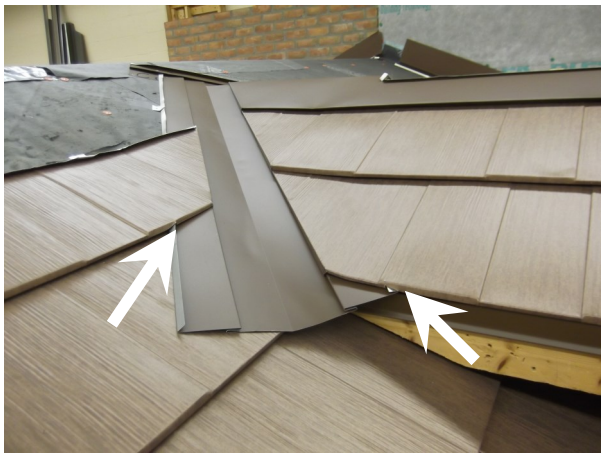

Fig. 1

When two Valleys intersect as at the top of a dormer, care must be exercised to make sure the two Valley pieces are "woven" together properly and sealed.

When finished, each Oxford Valley piece should be positioned so that the water return channels extend past the drip edge of the eave and over the course of shingles perpendicular to the dormer. The butts of the shingles over the water return channels must be cut to allow these channels to drain (**Fig.1 arrows**).

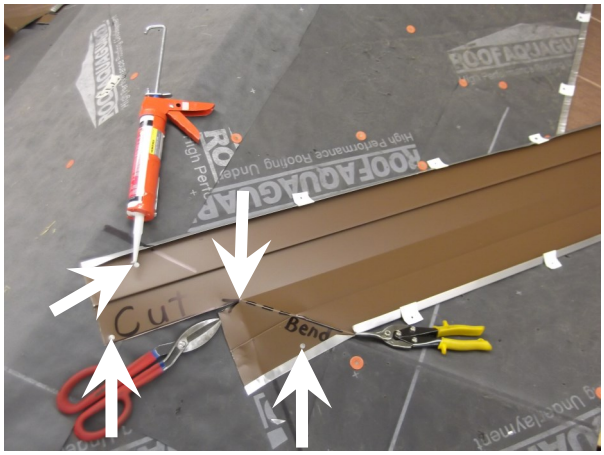

Fig. 2

Determine the point where the center of the first valley piece crosses the ridge line **(Fig.2 ,middle arrow)** and make a relief cut to that point. (**Note:** To make the seam between the two valleys less visible, install the first valley on the dormer side away from view most often.) Bend one side of the valley over the ridge. Fasten valley with two nails (**outer arrows**) and seal. Install nail clips 12" O.C. on both sides of the valley.

Fig. 3

Position the second valley piece at the eave and mark a line diagonally across the piece extending from the ridge of the dormer (**Fig.3 arrows**) . Mark and cut a stair-step pattern in this piece as seen in **Figs.3&4** to allow triangular tabs to extend across the ridge line. Using hand flangers, slightly over-bend the two tabs that will lap over the ridge.

Trim the second Valley if necessary to nest inside of the first as it laps over the extended ridge line. Apply sealant liberally **under** the overlap area before installing.

Secure the piece with two nails near the outer hems (**Fig.4 arrows**). Seal both the nails as well as all cut edges and overlaps with sealant.

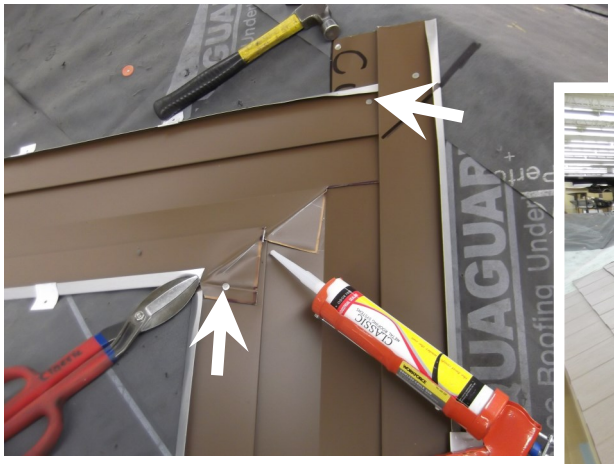

Fig. 4

Shingles into Valleys

When installing shingles into Valleys, it is very important to snap chalk lines across the roof section every one to three courses to ensure that courses remain parallel to the eave and ridge.

Fig. 1

Fig. 2

An edge taper should be bent into the valley side of the shingle tapering from 3/4" at the butt to 1/4" at the top (**Fig.1 arrows**). A 1/8" high drain slot will need to be cut in the butt corresponding to the width of the valley water return channel *on the first course only* (**Fig.2**).

Fig. 3

Lock the shingle temporarily into place to mark the bend line over the valley hem **(Figs. 2&3 arrows).** Note that the shingle in Figure 3 was rough cut to lock it in place and accurately make these marks. Adding another 3/4" for a lock that will go back into the hem of the valley will require 1-1/2" of extra material at the butt and 1" at the top as seen in **Figure 4**.

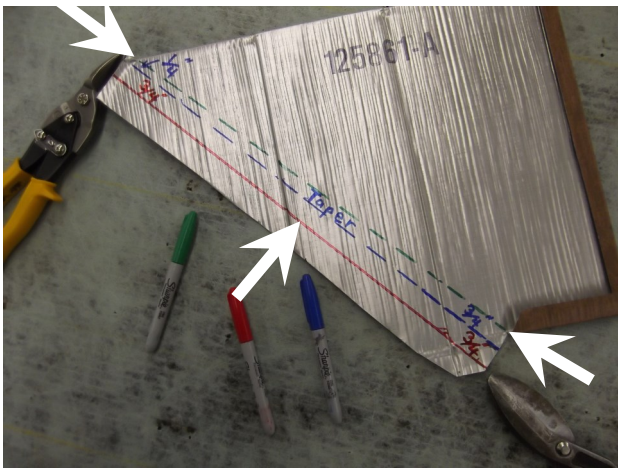

Fig. 4

Cut and fold open the top and bottom locks at the marks just made (**Fig.4**). The dashed green line in Figure 4 nearest to the body of the shingle represents the inner fold line**.** Cut the locks perpendicular to the inner fold line leaving about 1/8" extra material (**Fig.4 outer arrows**).

The middle, blue, dashed line represents the outer bend line which will produce the shingle taper. It should be 3/4" out from the butt and 1/4" out from the top of the shingle.

Draw a third line another 3/4" out from the taper line. This will be the cut line for the side lock that will fit back into the Valley Receiving channel (**center arrow on red line**).

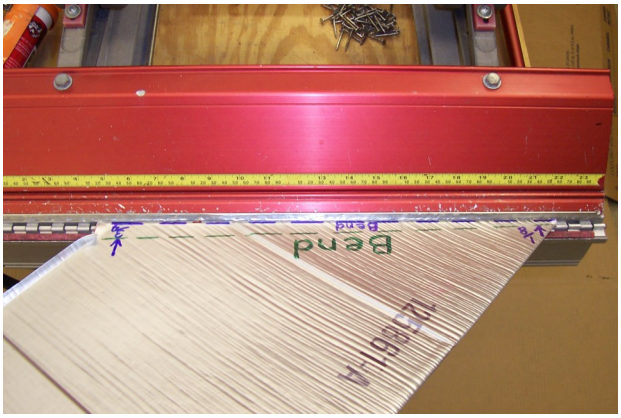

Fig. 5

With a portable brake, bend the shingle 90 degrees on the **outer** (blue) fold line. Straighten the shingle back out and repeat the same fold again to produce a "memory" in the metal that will allow hand bending this fold after the inner fold is bent.

With the shingle nearly straight, bend the shingle 90 degrees on the **inner** fold line(**Fig.5**). Remove the shingle and hand curl the side lock 180 degrees under. Install the shingle into the Valley Receiving channel as seen in **Fig.1**.

Fig. 1

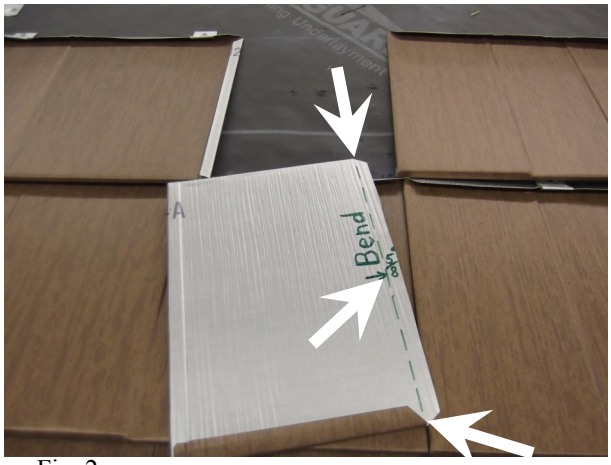

Fig. 2

Fig. 3

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Fig. 4

Forming Short Shingles

As mentioned earlier, when approaching a valley or hip it may be desirable to insert a short panel before the panel that will cross the valley hem or hip line. This will allow the diagonal cut and folds to be made on a single panel, instead of crossing the side locks between two panels (**Fig.1 arrow**).

This procedure will also be helpful for utilizing scrap shingles in that a new lock can be formed on either end of a cut panel.

To form a new side lock on a panel, determine the desired panel width and leave 5/8" extra material for the needed up-turned or under-turned lock **(Fig.2 middle arrow).** Snip the upper and lower locks in line with the bend line **(outer arrows)**. Use a brake or wide hand flangers to bend the new lock. Taper lock corners as necessary.

Damaged Panel Repair

Should a panel become damaged, in most cases the individual sections can be easily capped over. Identify the section of panel damaged and use sealant to fill any penetrations. Find the corresponding section from a scrap piece of panel, if possible, to make the cap.

Score on each side of the section several times (**Fig.3**). Cut the top and bottom locks in line with scores lines just made. Open up the top lock and cut off the upturned portion at the crease (**arrow**). Bend the shingle back and forth along the scored lines to separate the section from the shingle.

Apply a liberal bead of sealant around the entire perimeter of the damaged section. Slip the replacement section over the top of the damaged section. Using the rubber end of a hammer or similar tool, firmly engage the section in place (**Fig.4**).

Make sure the section is fully inserted under the bottom lock of the shingle above and locked around the bottom lock of the shingle being capped over.

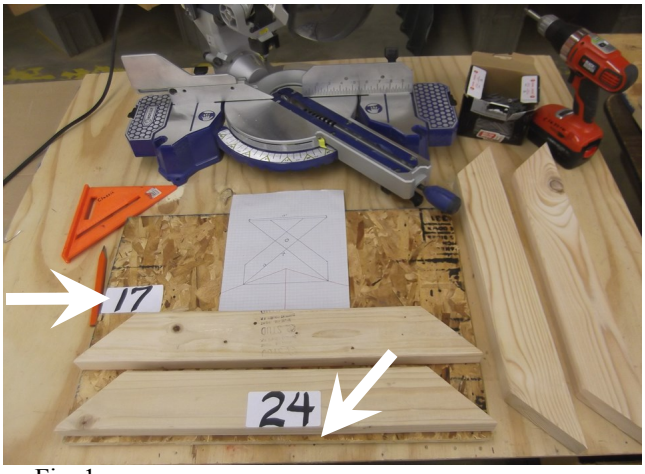


Fig. 1

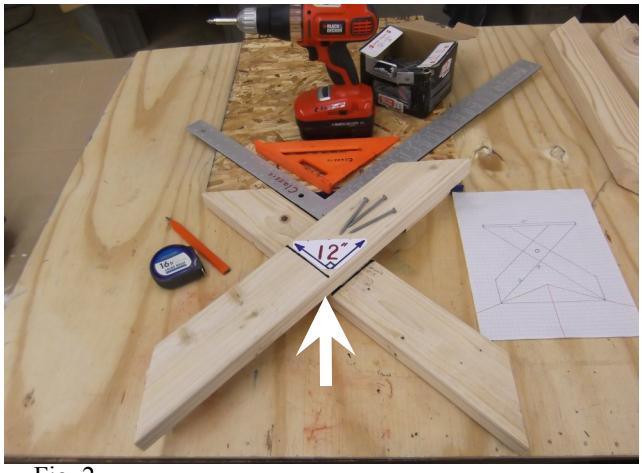


Fig. 2

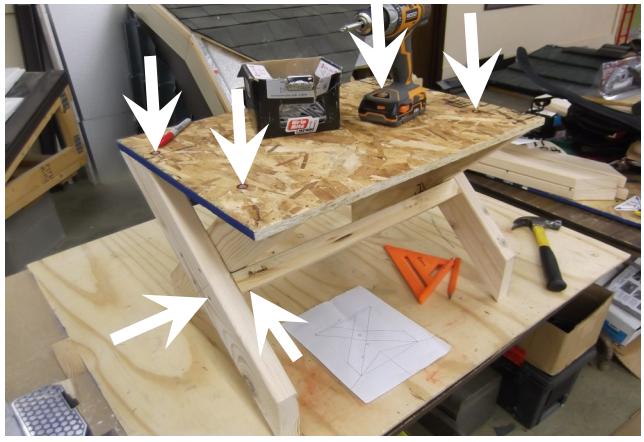


Fig. 3


Fig. 4

Ridge Brake Table

Using a hand brake is key to forming crisp edge tapers for aesthetically pleasing valleys. It is very desirable to be able to form these bends up on the roof instead of marking the shingles and having to bend them on the ground. A simple solution is to mount a small 2' brake at the ridge of the roof near the valley.

Isaiah Industries offers a **2' Van Mark® Brake** that has a base that measures 16-3/4" x 24". The following table is designed to securely hold this brake.

Figure 1 shows the legs and table top and their dimensions. The legs are 24" along the longest edge and are mitered at 45 degrees. The table top should be made out of plywood or OSB at least 1/2" thick and cut to 17" x 24". An additional cross brace seen in **Fig.3** needs to be cut from a 2x4 and should fit snugly between the outer legs and thus be about 21" long.

Mark all four legs 12" from one end, which corresponds the center point where two legs will intersect. Lap the legs at a 90 degree angle using a framing square as shown in **Fig.2** and fasten together with three **3" exterior screws**. Lap the second pair in the opposite order so that both outer legs will be on the same side of the table **(Fig.5 top arrows).**

Center and screw the 17 x 24 table top into the top of the mitered legs as seen in **Fig.3 (top arrows).** Friction fit a cross brace between the outer legs and fasten with screws all four legs as indicated by the **bottom arrows** in **Fig.3.** Center and drill a 3/16" pilot hole at a steep angle near the bottom point of each of the four legs to receive four anchor screws as seen in **Fig.5 (bottom arrows).** Drill four 3/16 screw holes in the aluminum tubes on the brake that will receive mounting screws as seen in **Fig.4 (arrows).**

Once the table is leveled and secured with screws over the ridge line, center the 2' brake on the table as seen in **Fig.4.** Fasten the brake to the table with four suitable screws.

It may be desirable to make this table out of treated or painted wood for long-lasting weather resistance.

Sidewall

Fig. 1

If at all possible, Oxford 2021 Sidewall should be installed behind existing house sidewall material such as vinyl siding. Fragile material such as stucco may require the use of butyl tape near the top, backside of the Sidewall flashing, a face-screwed terminator bar and a small, 1/4" kicked-out tray filled with sealant at the top of the flashing.

The Oxford 2021 Sidewall is 7-1/2" tall. This height allows the use of a 2x6 as a guide for cutting a 1/2" deep kerf (riglet) 7" above the deck in brick chimneys and sidewalls **(Fig.1).** Many circular saws have a 1-1/2" distance between the edge of the shoe and the blade. Using the 5-1/2" height of the 2x6 as a guide will position the masonry blade 7" off the deck, leaving 1/2" of sidewall height to be bent back 90 degrees into the cut.

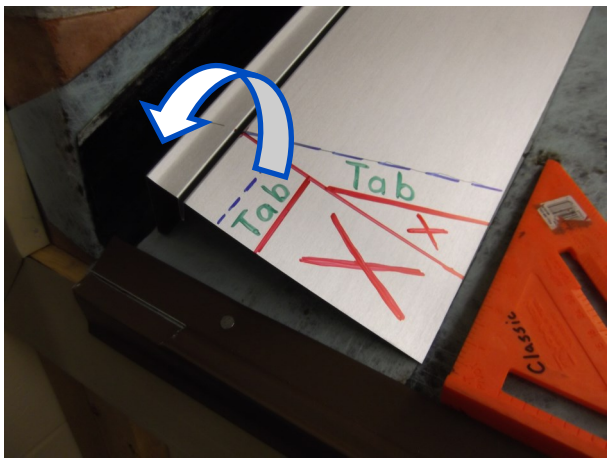


Fig. 2

Position the Sidewall to trace the necessary bend and tabs (**Fig.2**). Make sure the sidewall water return channel extends 1/2" past the Starter Strip. Leave a tab to wrap under the exposed, unpainted part of the "F" channel (**arrow**).

Fig. 3

Install the Sidewall Channel as seen in **Figures 3-6**. Extend the bottom of the channel 1/2" below the starter strip and nail to the deck 1" from the top of the lineal. Nail clips need to be fastened every 12" O.C.

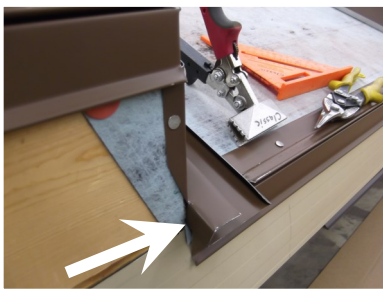


Fig. 4

Wrap and fasten a bent tab around the corner of the structure and apply sealant in the gap at the arrow in **Figure 4.**

Fig.5

In masonry applications, fill the kerf with sealant **before** inserting the sidewall into it. Another bead of sealant can then be applied over the insertion point **(Fig.5).**

Fig. 6

Above a ridge, lap and nest sidewall pieces and seal to prevent water infiltration **(Fig.6).**

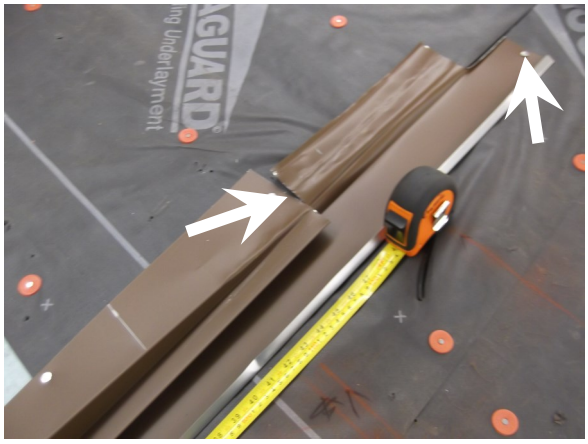


Fig. 1

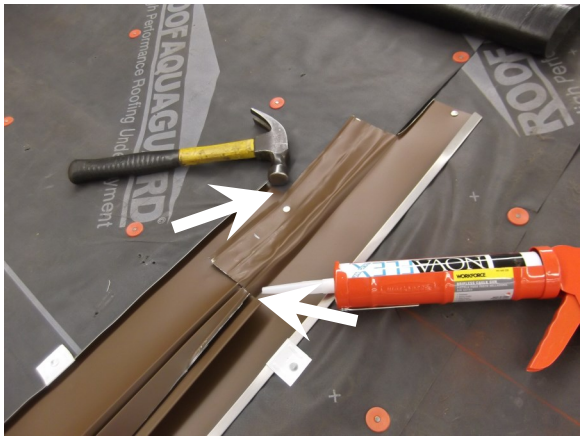


Fig. 2

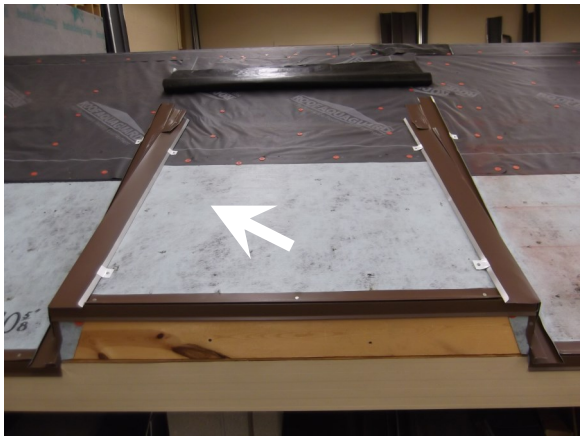


Fig. 3

Fig.4

Sidewall and Gable Channel Intersection

A Sidewall and Gable will intersect when a shed dormer without an overhang meets the main roof of a house. Care must be given to not allowing water infiltration at this intersection.

Position the Sidewall to trace and make the necessary bends and tabs at the eave and/or dormer corner. Fasten the sidewall in place 1" from its upper edge **(Fig.1, upper arrow).**

Cut the upper leg and top of the J channel of the sidewall down to the deck at the pitch change **(Fig.1 middle arrow).** This cut placement will allow panels to be installed above the top of the sidewall and across the dormer. On both sides of the cut fold the upper leg flat against the roof deck.

Cut a gable channel that extends from 1/2" beyond the dormer eave to about 4" above the cut just made in the sidewall channel **(Fig.2 top arrow).** Cut the fascia leg of the gable channel off at the same point that the sidewall leg was cut **(bottom arrow).** Taper cut the fascia leg of the gable channel below this point to rest upon the ledge of the sidewall.

Weave the two pieces together as shown and nail at the top of the sidewall water return channel **(near Fig.2 top arrow)**. Apply sealant liberally at the intersection of the two pieces.

Figure 3 shows the properly installed lineal pieces. Secure sidewall and gable pieces every 12" O.C. with nailing clips. Note the rolled up underlayment that has been inserted underneath the course above it. This underlayment will lap over the pitch change transition flashing once it is installed.

Shingle up both sides of the shed dormer as seen on the next page making sure to full engaged both side and top locks .

Alternate Stagger Pattern

Figure 4 shows an alternate, seven-course stagger pattern (60, 50, 30, 20, 48, 34, 13, repeat) mentioned in a previous manual that maintains a random appearance. Do **not** simply "stair step" the pattern in identical increments unless approved by the homeowner.

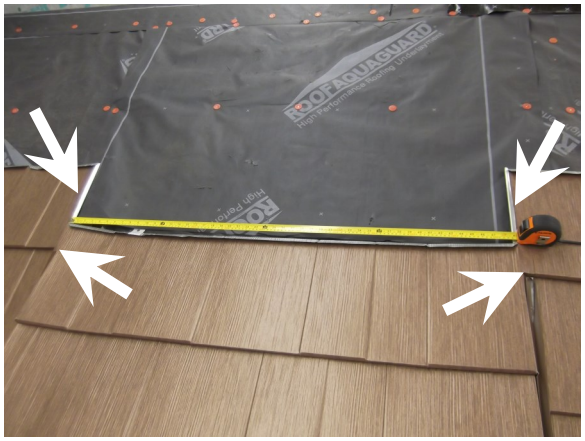


Fig. 1

Fig. 2

Fig. 3

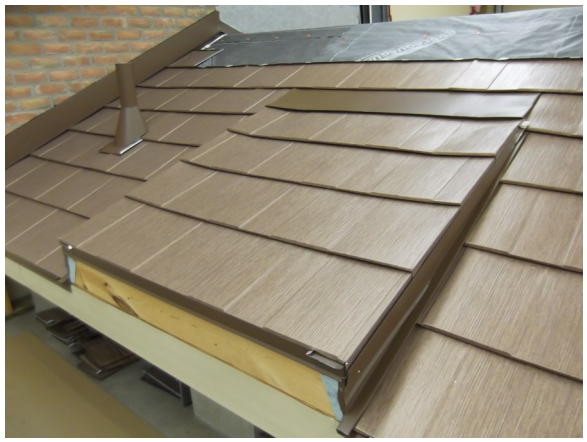


Fig. 4

Pitch Change Transition

Shingle the roof sections as shown in **Figure 1**, Bend 3/8" upturned locks in the shingles on both sides of the dormer as indicated by the **upper arrows.** The shingle over the dormer has been bent down into the gable channel at both sides but at the **lower arrows** has been snipped and opened up to be bent (locked) around the upturned locks in the side shingles. Sealant must be placed at the snipped area at the **lower arrows**.

Form a transition flashing that is wide enough to have 3/8" under-turned side locks **(Fig.2 right arrow)** to engage the 3/8" upturned shingle locks formed in **Figure 1.**

The transition flashing should also have a 5/8" under-turned hem to lock into the top lock of the last course of shingles below it (**Fig.2 lower arrow**). The flashing should be bent to mirror the pitch change and then extend a minimum of 3" up the roof.

Weave a piece of underlayment under the underlayment course above the transition and bring it down over the transition flashing to 1" above the pitch change bend (**Fig.3**).

Fasten a siding starter strip between the top locks of the shingles on the two sides of the dormer (and over the underlayment) to provide one continuous lock for the next course of panels (**Fig.3 arrows**). Putting dabs of sealant on the flashing at the points where nails will attach the starter strip will provide extra protection against water intrusion.

Follow standard installation procedure and install the next course of panels across the top of the transition (**Fig.4).**

Transitioning from a **high to low pitch**, such as on a gambrel barn roof, is done in a similar manner but with the coil flashing being bent in the opposite direction mirroring the pitch change **(Fig.5).**

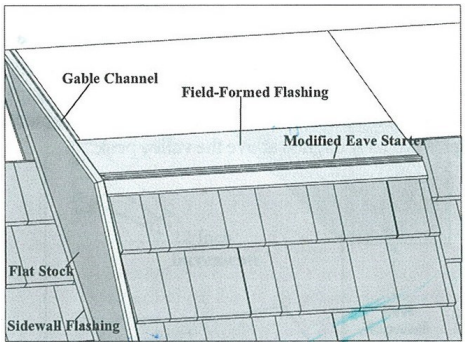


Fig. 5

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Staggered Starts

Fig.1 shows a "bump out" or a staggered start situation that would cause the top locks of the two roof sections to not align. The amount of course offset in this picture is about 7" (**arrows**). **Note** that an installer might choose to make up a 5" difference at the **upper** eave if this eave is shorter than the lower eave.

There are two methods shown on this page for making up this offset. Both make up the difference at the eave. It is critical that the **precise** distance to be made up is known. Temporarily setting shingles in place can enable this measurement to be determined(**Fig.1**). Always avoid installing a short course in the middle of a field.

The first method entails using coil stock to make up the difference at the eave. The coil should run a minimum of 3" upslope beyond the difference to be made up. An additional 5/8" is needed for an under-turned hem to lock into the Starter Strip. The coil stock will bent down about 1-1/2" at the sides into the gable channel and needs to have a drain slot cut for each water return channel (**Fig.2 arrows**)

Fasten a piece of anchor strip between the water return channels at the exact distance needed parallel to the edge of the Starter Strip. Nail every 12" O.C. into a dab of sealant place under the Starter Strip **(arrow).**

Fig.3 shows this **coil stock method** with shingles installed.

A second method for making up the needed distance is to install the first course of shingles and fasten the anchor strip through the shingles as described above at the appropriate distance upslope (**Fig.4**).

This method of applying in a short course at the eave may look the best when there is more that half a shingle's height to be made up. Foam inserts should back the shingles being face nailed.

Fig.5

Fig.5 shows this **short course method** with shingles installed.

Roof Jacks

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Roof jacks with toe boards are very useful for working on roofs with a steep pitch. Wrap the jacks with cardboard and tape to keep from scratching the surface of the panels. Position the jacks every 4 to 6 feet.

It is imperative that each jack be attached to a rafter and not just through the decking. To accomplish this, use a stud finder adjusted to deep mode or drill two locator holes next to the rafter from inside the attic. Seal these holes from the roof deck.

Snip the top lock of the shingle about 1" wider than the jack and fold this tab against the deck. This tab **must be fully flattened against the deck and secured with two nails** to prevent it catching the jack when trying to remove it (**Fig.1 arrows**). Attach the jack at the left side of the slot if it is to be pushed up to the right as seen in **Figure 2**.

Attach the bracket to the deck far enough up so that the bottom of the jack does not crush the shingle butt. Foam inserts place behind the supporting shingles will keep them from being flattened. Nail all three slots with heavy deck screws or nails. Be careful not to over drive the fasteners for ease of removal.

Fig.2 shows the removal of a roof jack. The jack needs to be hammered or pushed up and to the right to be dislodged and then pulled down and out. Clear sealant may be used to fill the space left in the lock.

Snow Guards

Snow guards can be installed in areas where falling snow is undesirable such as over doors, walkways, landscaping or lower roofs. A basic installation pattern is two parallel rows one course apart with guards staggered 18" O.C. in a "W" pattern. Additional snow guards may be desired based on roof design and snow load.

Isaiah Industries' Cast Aluminum Snow Guard with attachment leg (**Fig.3**, SH-669) screws to the roof deck **during** shingle installation. A 2X4 block can be used to space the Snow guards 1-1/2" down from the shingle butt. Snow Guard SH-662 is adhered under the top lock, and then through-fastened. It is for use only on an existing roof.

Fig. 1

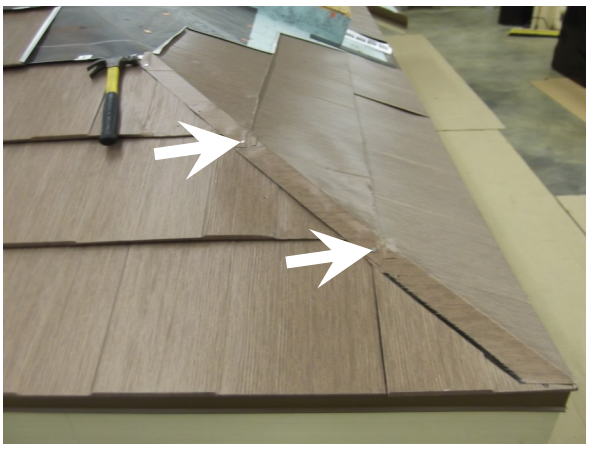


Fig. 2

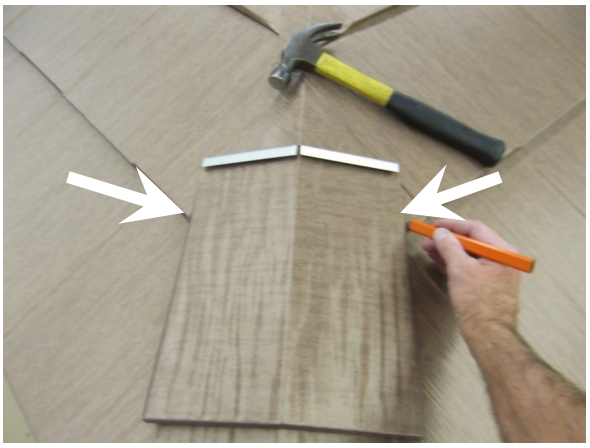


Fig. 3

Fig. 4

Hip Caps

Oxford shingles have two hip treatments using either Hip Caps (part 2007, **Fig.4**) or Hip Lineals (2070). The following procedures are for the installation of Hip Caps.

Chalk a line along the hip from eave to ridge. Cut all shingles coming to the hip from the left even with the ridge line (**Fig.1 right arrow**).

Shingles on the right side of the hip line will lap over the hip line 2" to the left of the line. For extra protection, sealant can be applied about 1-1/2" to the left of the hip line as each shingle is installed. This is indicated by the line drawn in **Fig.1 (left arrow**).

As mentioned above, lap the shingles on the right side of the hip 2" over the hip line to the left and on top of a bead of sealant. Fasten the ends of each shingle with two or three nails to cause the shingle to rest flat against the shingle on the other side (**Fig.2 arrows**).

The forming of the first corner cap is discussed on the next page. Fold each subsequent Hip/Ridge Cap along its center line as required to fit the specific roof pitch. Chalk a line to keep Hip Caps straight as they are being installed on a long run.

The **butts of the shingles** under each of the caps **must be flatten with a hammer before attachment of the caps** to ensure that the cap edges sit **flat** against the shingles to resist water infiltration. **(Fig.3 arrows).**

Using only nails or screws of a length long enough to fully penetrate the substrate, fasten each Hip/Ridge Cap through four (4) fully engaged nail clip.(**Fig.4**).

Make sure the butt of each subsequent cap is fully engaged before nailing. Each cap will have an 12" vertical exposure .

A subsequent page will deal with installing caps at the intersection of two hips and a ridge.

Corner Hip Caps

Fig. 1

The first Hip/Ridge Cap at each hip will need to be modified to hook over the first course shingles as they meet at the corner of the eave. The end of the cap will need to conform to the corner of the roof.

After opening up the bottom lock of the first Hip Cap, center the cap on the hip line far enough down to fully mark the corner roof angle (**Fig.1**).

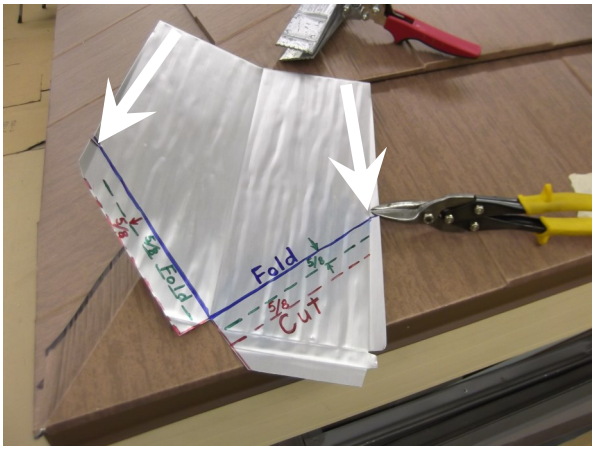


Fig. 2

Turn the cap over and check to see that the two fold lines that were just traced (**purple in Fig.2**) meet in the center of the cap and are equal distances down from the top corner **(arrows).**

Mark a second set of fold lines parallel to and 5/8" down from the first set of fold lines (**green**). Mark two **cut** lines (**red**) another 5/8" down from and parallel to the second fold lines. Notch the side of the cap about 3/8" (**Fig. 2 arrows**) so that the flattened sides can be re-bent into position after the butt is formed. Cut out the Cap as indicated in **Fig.2**.

Fig. 3

In a brake or with hand flangers, bend the cap as seen in **Figure 3** to form a new butt and under-turned lock. Bend the outer folds first and then temporarily flatten so that the inner folds can be bent. Refold the under-turned lock by hand or with hand flangers.

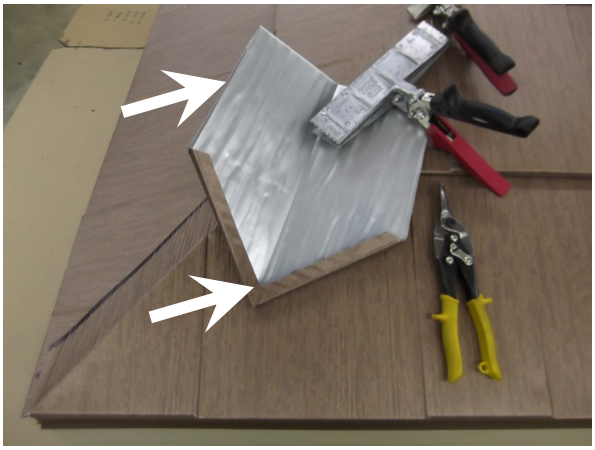


Fig. 4

Fig.4 shows a properly formed corner Hip Cap. Note the miter cut at the **bottom arrow** and the down-turned sides (**top arrow**).

Center the corner Hip Cap on the hip line and fasten through four nailing clips. Install Hip Caps the entire length of the hip. Make sure that each cap is fully engaged into the next cap and centered on the hip line.

Hip Lineals

Fig. 1

Center a square 7"x 7" piece of cardboard on a hip line with one edge just over the Starter Strip. Trace the angle and cut the cardboard to make a **template** for cutting the hip lineals. Fold on the center line. Using a pencil, transfer this angle to the hip lineal at the end and also 1" in from the end (**Fig. 1**). Cut the front edge with snips.

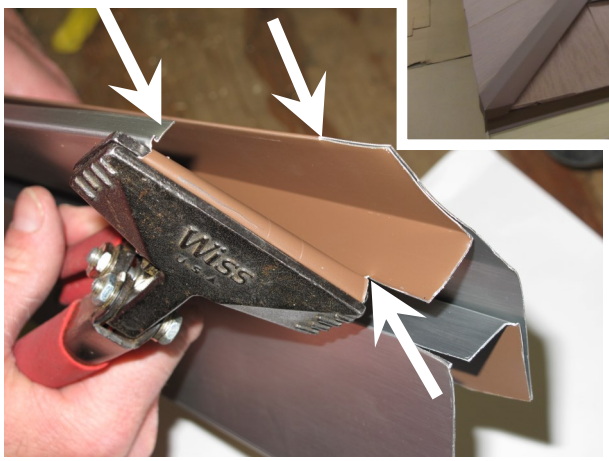


Fig. 2

Cut the outside nailing flanges back to the 1" mark and angle back slightly for a neat appearance (**Fig.2 left arrow**). Cut the bottom inside of the water return channel 3/4" back to allow for a tab to be folded under **(bottom arrow).** Using hand flangers, bend tabs 3/4""back. These tabs will fit into the Starter Strip.

Slightly taper cut the outside edges of the "T" top of the hip lineal back to the 1" mark (**Fig.2 right arrow**).

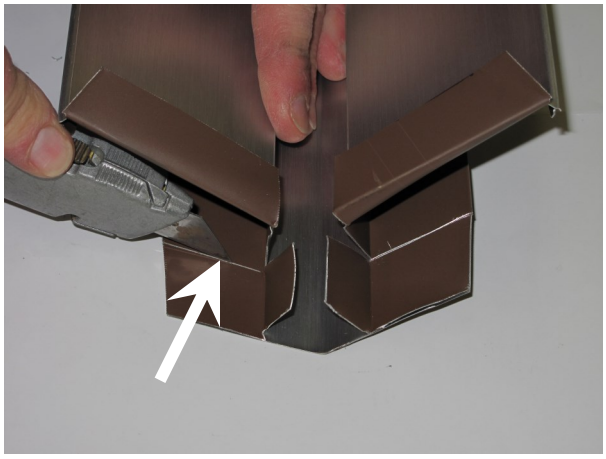


Fig. 3

Score the underside of the "T" top 1" in and parallel to the end of the lineal (**Fig.3 arrow**). Remove this material in order to be able to make a crisp bend for a down-turned tab.

Cut a narrow "V" centered on the top of the "T" to allow the down turned tabs to fit neatly together. Be careful not to trim too much.

Using hand flangers or uniform pressure from three fingertips, bend top tabs approximately 80 degrees down (**Fig.4**). Trim center "V" cut as necessary and insert tabs into eave starter.

Secure hip lineal with clips on both sides 12" O.C. Cut and insert shingles remembering to maintain the stagger pattern and to cut a drain in the first course (**Fig.5 arrow**).

Fig. 4

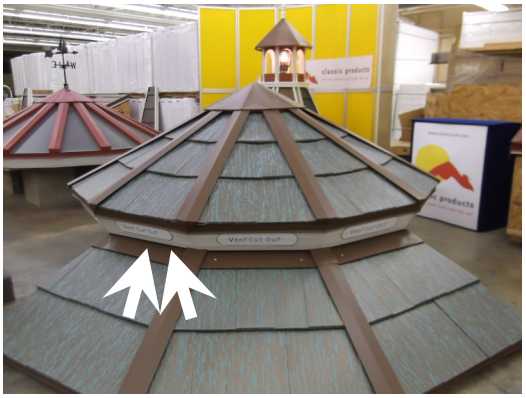


Fig.5

Fig. 1

Fig. 2

Fig. 3

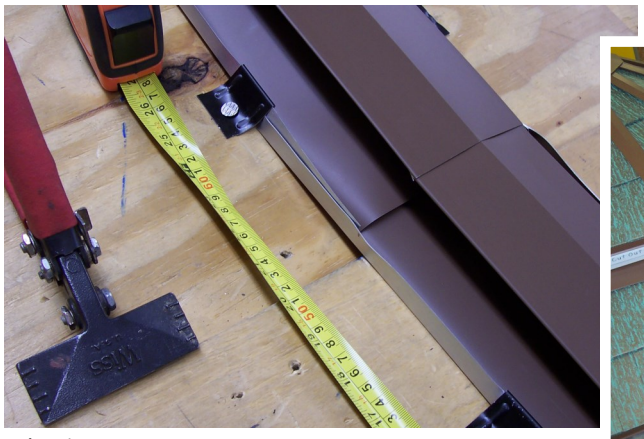


Fig. 4

Joining Hip Lineals

(For hip lengths over 12' or pitch changes)

The bottoms of the hip lineals should be formed and check fitted into the Eave Starter. The procedure for joining two lineals is as follows:

Mark both sides of **lower** lineal "T" top at 3" (2" may be sufficient at a pitch change).

Slightly taper cut both sides to the 3" mark (**Fig.1**).

With a utility knife or snips, score or cut the top of the inside wall of the lower lineal back 3" and lift the top (**Fig.2**).

Open both nail flanges of the lower lineal enough to receive the bottom 3" of the Top lineal. The lower flanges (coming from the top left in **Fig.3)** will be wrapped around the upper flanges (**arrow**).

Apply two parallel lines of sealant in the 3" overlap section of the water return channel of the bottom hip lineal.

Slide upper lineal over the taper in lower lineal (on the right in **Fig.4**) to the 3' mark.

Wrap lower flanges around upper flanges.

Secure lineals every 12" O.C. with nailing clips and aluminum or stainless steel ring shank nails on both sides of lineal.

Figure 5 shows the hip lineal used on a display with a pitch change.

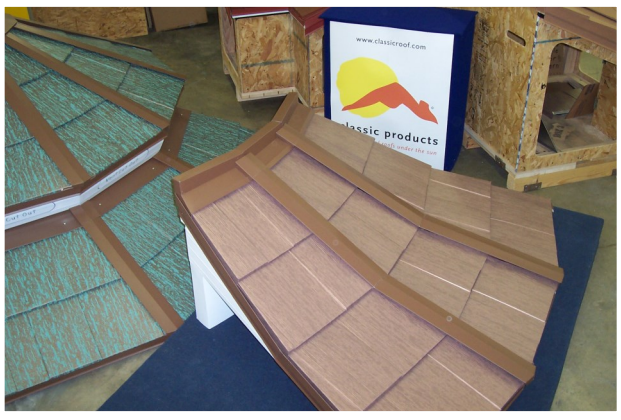


Fig. 5

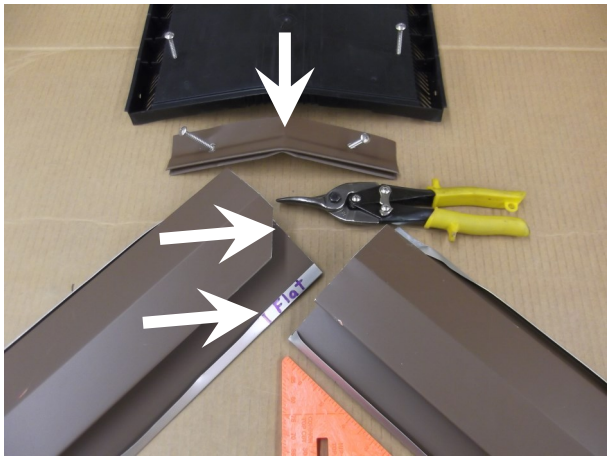


Fig. 1

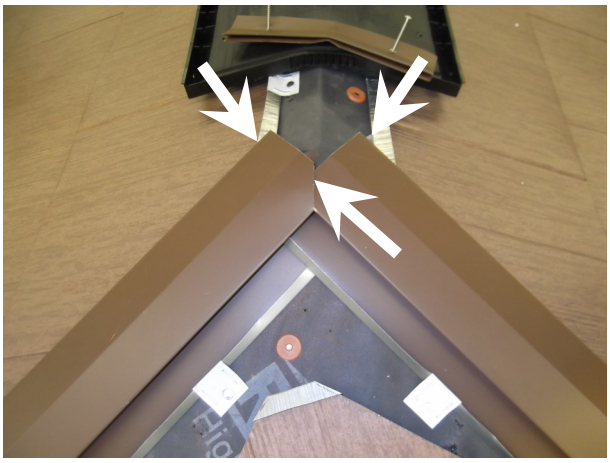


Fig. 2

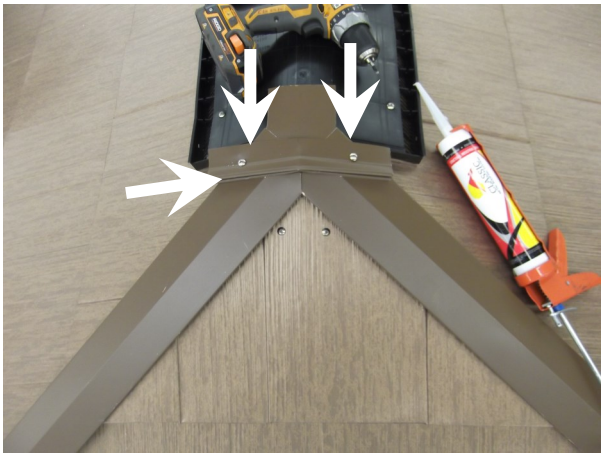


Fig. 3

Fig. 4

Hip Lineals into a Vented Ridge

When joining hip lineals to a ridge vent it is important to make sure that all components are centered on the appropriate hip or ridge lines.

Mark and cut a 45 degree angle on one of the hip lineals. Notice that the cut does **not** come to the center of the lineal but to the back edge of the shingle-receiving channel **(Fig.1 middle arrow).** Flatten the hem on the same lineal to allow the other lineal to sit flat on top of it as they nest together **(bottom arrow).**

Make an 11" wide cleat for starting the ridge caps from siding starter and fold in the middle **(top arrow**).

Open the angled cut on the T top of the one lineal to receive the corner of the T top of the other lineal. Join the lineals **(Fig.2 bottom arrow)** and center them on their respective hip lines. Fasten each lineal to the roof deck at its upper corner (**top arrows)** and then with nail clips opposite each other every 12" O.C. Shingle on all three roof planes up to the ridge.

After the appropriate ridge vent opening has been cut, center the plastic vent **under** the T tops of the two hip lineals **(Fig.3 top arrows).** Secure the Ridge Vent using 2" stainless steel screws making sure the vent sits flat against the shingles but is not buckled.

Attach the Ridge Cap Cleat near the outer edges of the two T tops. Use two 2" screws to penetrate the roof deck. Bend up top locks of shingles not under the ridge vent (**side arrow**) and insert coil pieces as necessary to prevent insect infiltration.

Hook the first Ridge Cap on to the cleat making sure that it is centered on the Ridge Vent. Attach the Cap using two, 2" screws **(Fig.4).** Install Ridge Caps the remaining length of the ridge making sure that the butt of each cap is **fully engaged** on each cleat and centered before screwing it in place.

Top Wall Flashing

Fig. 1

Fig. 2

Fig. 3

Fig. 4

When a shed roof terminates into a vertical wall of a larger building it is sometimes referred to as a lean-to roof. The top wall flashing at this junction should always be installed **behind** the covering on the vertical wall if possible. If this is not possible because the wall covering is masonry etc., about 1/2" of the top of the flashing should be bent back 90 degrees and inserted into a kerf filled with sealant and positioned 4" or so above the intersection. Then apply more sealant.

A third option when the top-wall material prohibits the first two techniques, as with some stucco applications, is to seat the top of the flashing into butyl tape or a continuous, thick bead of sealant. A face-screwed terminator bar positioned just under a 1/4" tray bent out at 45 degrees at the top of the flashing and filled with sealant will provide continuous pressure and an adequate seal. Contact Isaiah Industries for more details.

As seen in **Figure 1(arrow)**, underlayment must run up the vertical wall at least 4". It is most desirable for the field-formed top wall flashing to hook into the top lock of the last full course of shingles as shown in **Figure 3**. If for aesthetic reasons this is not desirable because the top lock falls too close or too far from the wall, a leg 4" or so can be formed and riveted mid-panel as shown in **Figure 4**. In this case, the last, partial panel should be turned an inch or two up the wall (not cut off at the wall intersection) or bent back 3/8" to serve as a water stop.

Figure 2 profiles the bending that needs to be done at the gable edge of a top wall flashing from the backside of the piece. The **bottom arrow** points to the 3/4" under-turned lock. The **upper right arrow** identifies the 1-1/4" turned-down tab that will be inserted into the Gable Channel. The **left arrow** points to a tab that will be wrapped around the corner of the house so there will be no gap between the flashing and the house. If the tab will be exposed, fold a hem back on the tab to produce a finished edge and greater strength (also seen here along the top of the flashing).

The arrow in **Figure 3** shows a point needing sealant to prevent possible water intrusion. Normally, the vertical leg of the flashing would be lapped **behind** siding material. **Figure 4** displays the application of a rivet to an apron. Touch up paint is subsequently applied with a cotton swab.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Chimney, Skylight, and Dormer Flashing

The pictures in this section show recommended flashings around a **chimney**. **Curb mounted skylight flashings** will be identical with the exception of the top of each flashing which will need to be formed to fit the skylight-specific counter-flashing (**Note:** the skylight manufacturer may require the use of their flashing kit to validate their warranty.) Similar techniques and pieces for the front and sides of a **dormer** are seen on a subsequent page.

Inspect the chimney and its flashings to see if any repairs need to be made before proceeding. Remove old chimney flashings **only if** they interfere with new flashings. Make sure that underlayment has been run at least 4" up the sides of the chimney as described at the beginning of this manual.

A 1/2" deep masonry cut (kerf or riglet) must be made at a uniform height (at least 5") parallel to the deck all the way around the chimney. The cut should be above existing flashings. Using a 2x6 as a guide with most circular saws will place the kerf at 7"(**Fig.1**). This leaves 1/2" of the standard 7-1/2" sidewall height to be bent 90 degrees into the kerf. If the kerf needs to be higher than the sidewall height, counter-flashing will need to be formed to lap down to the sidewall ledge.

Fig.2 shows the profile of the front, field-formed apron flashing. The flashing should extend down to the roof deck from the kerf and 4" or so out on top of the shingles below. It should be **8-10" wider** than the chimney **(4-5" on each side)** so that the sidewall water return channel completely empties on to it. See the dormer section on page 35 for the formation of flanges that will enable the sidewall water return channel to nest inside the apron flashing.

A bend and a 1/2" under-turned hem will add a finished appearance and additional strength. Depending on where the course below the chimney falls, it may be possible to hook this into a top lock.

Fig.3 displays the cuts and folds that need to be made to wrap the apron flashing around the sides of the chimney and to form a tab (**Fig.4 arrow**) to nail to the deck. Sealant should be placed into the kerf **before** the insertion of the flashings (**Fig.4**). A second bead of sealant can then be applied after the flashing is in place.

Fig. 1


Fig. 2


Fig. 3


Fig. 4

Chimney Sidewall and Upslope Flashings

Install 2021 Sidewall Flashing along the two angled sides of the chimney. Each piece must be long enough to extend 1" past the bottom corner of the chimney. It should extend at least 1/2" through the butt of the first shingle to be inserted into the channel or be hooked over the top lock of the shingle as seen in Figure 1 **(bottom arrow).** A drain slot must still be cut in the shingle in either case.

The Sidewall Flashing should extend at least 3" uphill of the chimney and be attached with a nail at the very top and nail clips every 12" O.C.

Hold the sidewall piece against the chimney to mark the front and back fold lines shown by the dotted lines in **Fig.1** (**left arrows**). Draw lines for 1" tabs to wrap around the front and back of the chimney. Notice that another tab is cut to be wrapped down around the back of the J channel to cover the exposed part with painted metal **(upper right arrow**).

Figure 2 shows the sidewall ready for installation. Note the front wrap-around tab (arrow). Insert sealant into the kerf and then put the sidewall in place. Then run a second bead of sealant.

Cut a drain slot in the bottom lock of the first shingle to be installed into the Sidewall Flashing (**Fig.3 bottom arrow**). Fasten stainless steel screws or aluminum rivets as needed (**upper arrow**).

Apply clear or color matching sealant to all joints, openings and behind tabs.

Install shingles up the side of the chimney inserting them fully into the sidewall channel (**Fig.4).**

The shingle at the top corner of the chimney should be cut around its corner and extend across the top of the chimney as seen in **Figure 4 (arrow)**.

Chimney Upslope Flashing

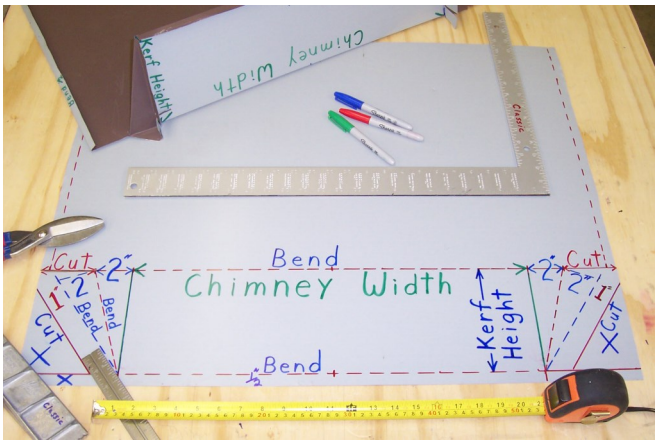


Fig. 1

Using a brake, form an upslope flashing for the back of the chimney that extends at least 12" up the roof and 5" up the back of the chimney with a 1/2" lip to insert into the previously made saw kerf.

Figure 1 displays the cut and fold lines for the flashing. The flashing should be 10" wider than the chimney to form "dog ears" on both sides that will divert water around the chimney. **(Fig.2 bottom arrow).**

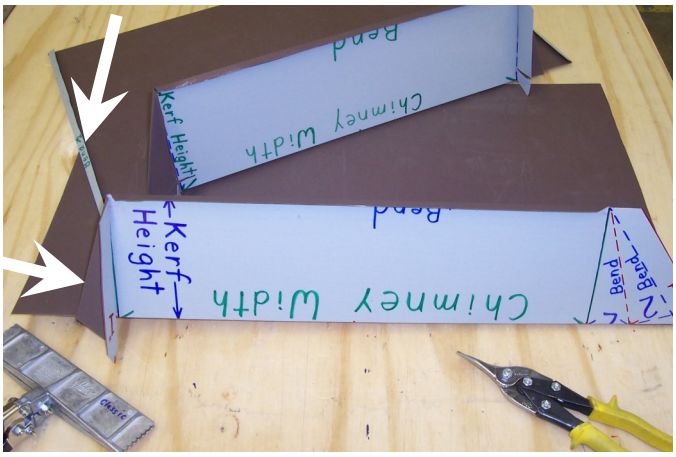


Fig. 2

Form 1/2" upturned water return flanges on the sides of the back flashing (**top arrow**).

Figure 2 displays two upslope flashings with the bottom one having one side already bent with a dog ear and tab. The dog ears should extend 2" beyond the corner of the chimney, have 2" of the colored coil bent back over the dog ear, and then have a 1" tab bent 90 degrees out along side of the chimney.

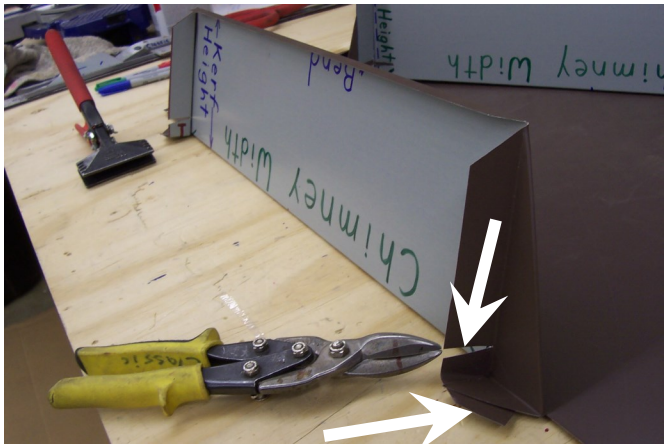


Fig. 3

Fig.3 shows two tabs folded at the **bottom** of the dog ear and side tab that will further prevent water infiltration where the corner of the chimney meets the deck **(bottom arrow).**

A slot at the appropriate height will then need to be cut to go around the ledge on the sidewall channel **(top arrow)**.


Fig. 4

After making sure the upslope flashing fits securely around the chimney, remove it and put a bead of sealant in the saw kerf and where the tabs will cover the sidewall corners **(Fig.4 arrow)**.

Put the flashing in place with the lip into the kerf and put a second bead of sealant over the kerf. Seal the joint where the sidewall ledge meets the dog ears as seen in the photo.

Chimney Upslope Flashing and Crickets

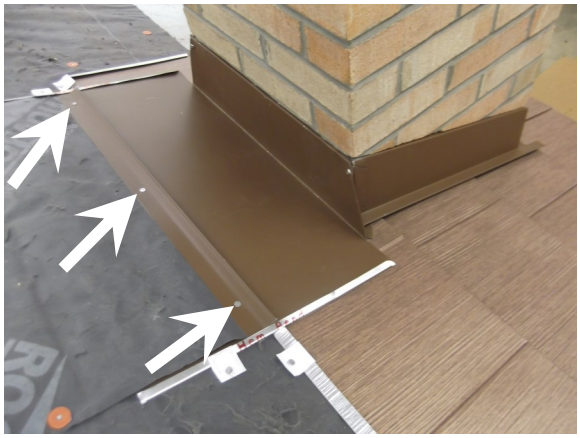


Fig. 1

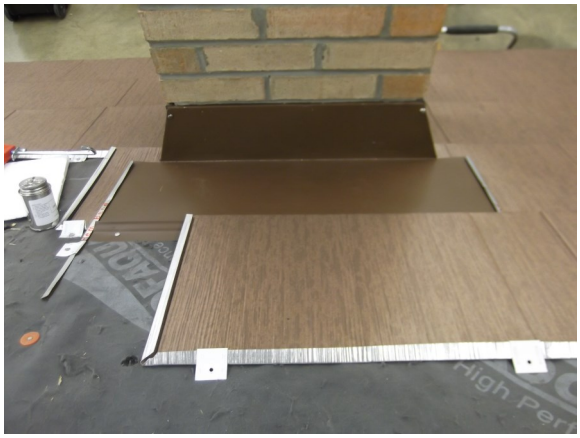


Fig. 2

Fig. 3

Cut a piece of anchor strip to fit between the flanges of the back-flashing. This will be the lock for the course of shingles running past the top of the chimney and must be aligned with the shingles locks on both sides of the flashing **(Fig.1).**

Weave a piece of underlayment the width of the pan under the underlayment above the pan and down to the front edge of the anchor strip. Put a dab of sealant at the spots on the pan where the nail will penetrate **before** setting the anchor strip in place and driving the nails (**Fig.1 arrows)**).

Before installing the uphill flashing, the side flange can be snipped where it will come out of the butt of the shingle above the chimney and turned under (not pictured). This will hide the unpainted metal and still provide rigidity.

Fig.2 pictures the first course of shingles running past the back of the chimney over the pan

Apply sealant under the sides of the upslope flashing (**Fig.3 arrow).**

For larger chimneys, especially near the eave, a cricket or saddle should be installed on the backside of the chimney. **Fig.4** illustrates a cut and bend pattern that can be fabricated using coil stock. The next two pages will picture and describe a similar installation.

If the chimney is quite large, valley pieces can be used such as detailed in the previous section on "intersecting valleys". The sides of the cricket can then be covered with coil stock or shingled and capped like a dormer.

Cricket flashing at Backside of Chimney

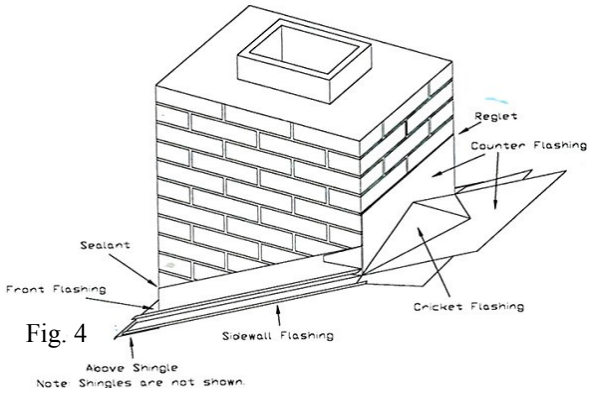
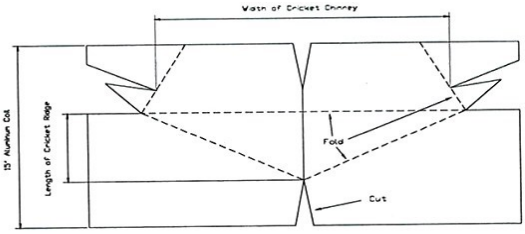
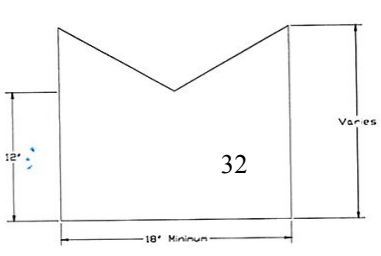


Fig. 4



PATTERN B
Secondary Flashing
2 Required

PATTERN A
Base Flashing



Crickets

Fig. 1

Fig. 2

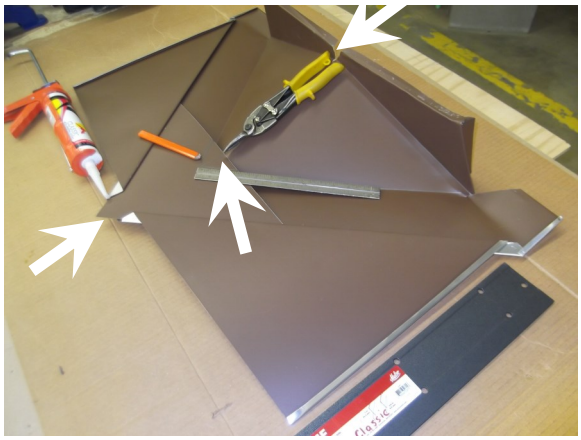


Fig. 3

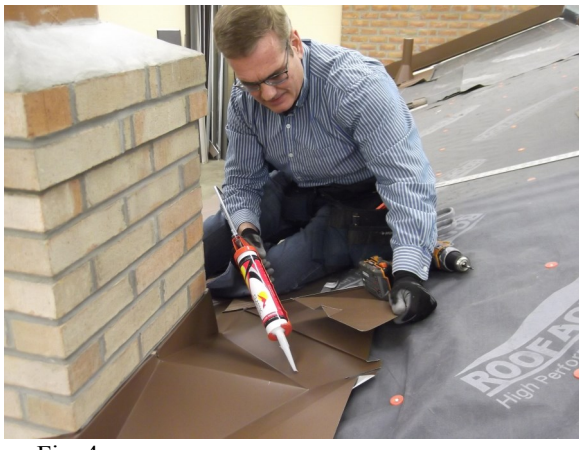


Fig. 4

Using a "2 x" and decking material, build a cricket with adequate slope to shed snow efficiently around the chimney as seen in **Figure 1 and the inset**.

Make the edges of the cricket extend about 1/2" beyond the edge of the chimney. Making the two legs of the right triangle pictured **(arrows)** the same dimension may be convenient and effective.

Run underlayment over the cricket, up the chimney and slightly around its corner. Make sure the upper edge of the underlayment is woven **under** the underlayment course above it. **Figure 2** pictures the installation of a shingle around the corner of the chimney and bent up the cricket and the back of the chimney. Sealant is then applied at the corner of the chimney.

Figure 3 pictures the details of making the base flashing. The flashing should be about 12" wider than the chimney. Perform the following sequence of folds and cuts:

1. Center fold to roof pitch in line with the **outer arrows** shown.
2. Relief cuts for material above the cricket and upslope of it (under triangular coil insert in picture).
3. Brake the diagonal valley creases of the cricket.
4. Z folds parallel to and 4" or so from the creases to serve as a water stops and to anchor shingles like a Z valley (depending on their position on the slope).

5. Form backsplash against the chimney with 2" dog ears and 1" tabs as detailed on a previous page.
6. Trim and bend to make flanges to insert 1/2" into kerfs in chimney.
7. Bend 3/8" flanges on the sides of flashing (the part of these not covered by shingles can be folded under or painted for aesthetic appeal).
8. Form and insert triangular piece to cover relief cut upslope of cricket. Make a relief cut in line with the cricket ridge **(middle arrow).** Bend corners up as necessary to flatten over cricket.

As seen in **Figure 4** with the base flashing inserted in the kerf filled with sealant, apply sealant where the triangular piece will be placed and especially along its leading edge and along the relief cut over the cricket. Apply an additional bead of sealant to the chimney kerf.

Fig. 5

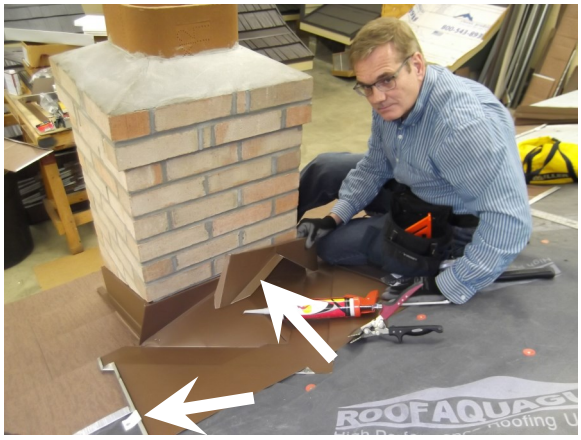


Fig. 6

Fig. 7

Fig. 8

Crickets cont.

As seen in **Figure 5**, attached the base and triangular flashings to the deck through the Z folds using stainless steel screws or aluminum ring shank nails **(arrow).**

Use nail clips to fasten the side flanges to the deck **(Fig.6 bottom arrow).**

Form a counter flashing as seen in **Figure 6** to cover the relief cut resting against the chimney in the base flashing. This flashing should also have a flange to be inserted into the kerf and sealed. A 1" flange to rest on sealant on the cricket will help prevent water from entering behind the counter flashing **(top arrow).**

Allow enough material to be wrapped and crimped around the dog ears of the base flashing as seen in **Figure 7**. Notice that the bottom corner of the base flashing has been wrapped around the shingle in this picture **(arrow).**

Install shingles across the top of the base flashing. If less than half of the shingle will cross the cricket, the Z cleat will probably not be used. Instead, simple make a relief cut in the shingle over the cricket ridge and fold open the butt of the shingle **(Fig.8 center arrow). Note:** the butt material between the cricket and the Z fold can be snipped and bent down to serve as a stop against insect infiltration **(left arrow).**

Apply sealant between the shingle and the cricket and along the relief cut. Secure shingle to cricket with two sealed, stainless steel screws **(middle arrows).**

Apply sealant under the edges of base flashing as seen in **Figure 9.** If the exposed flange has not been bent under as seen in the photo, paint to coordinate with the roofing material **(arrow).**

Fig. 9

Dormer Flashing

Fig. 1

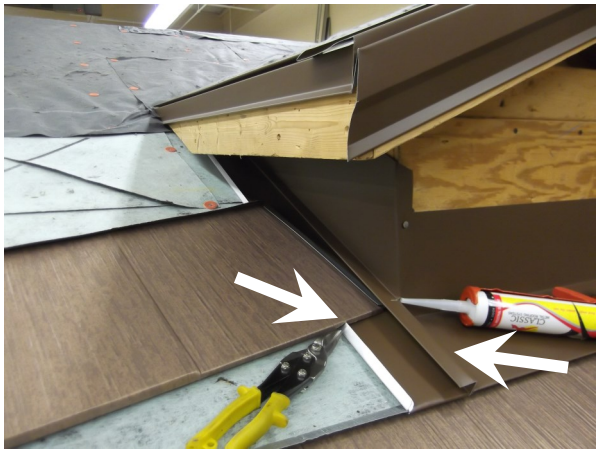


Fig. 2

Fig. 3

Fig. 4

A few minor variations from the flashings around the chimney are seen incorporated here on the dormer.

First note in **Figure 1**that the apron flashing is hooked unto the top lock of the shingle below it with a 5/8" under-turned hem **(bottom right arrow).** This may not always be aesthetically desirable if the top lock is too far down from, or close to, the dormer.

Second, a 3/8" upturned hem is bent into the side of the apron flashing so that the water return channel of the sidewall flashing will nest inside of it **(middle arrow).** The **upper left arrow** points to a 3/8" water stop turned back about 135 degrees. Notice that the sidewall was cut down to allow the water return channel to run up as far as possible under the overhang.

Finally in **Figure 1 (lower left arrow),** a 5/8" under-turned hem is bent into the water return channel to hook around the base flashing About 1/2" of this should be removed horizontally as a drain slot at the edge near the arrow.

The application of sealant along the intersection of the apron and sidewall flashings will provide additional protection **(Fig.2 right arrow).** As always, **figure 2** shows a drain slot cut in the butt of the shingle being installed at the bottom of the water return channel **(left arrow).**

Figure 3 shows that shingles should be run up the sidewall flashing and under the overhang as far as possible. As seen in the photo, it is essential to bend a 3/8" water stop at the side edge of the shingle that will rest under the valley **(arrow).** Sealant is applied to the intersection of the hem and the drip edge of the starter strip.

Figure 4 details the positioning of the valley. Notice that the lower right edge of the valley just protrudes through the first course shingle. A 1/8" drain slot is cut over the valley's water return channels. **(outer arrows).** Sealant should be applied under the upslope side of the valley that rests on top of the shingle (**bottom left arrow**).

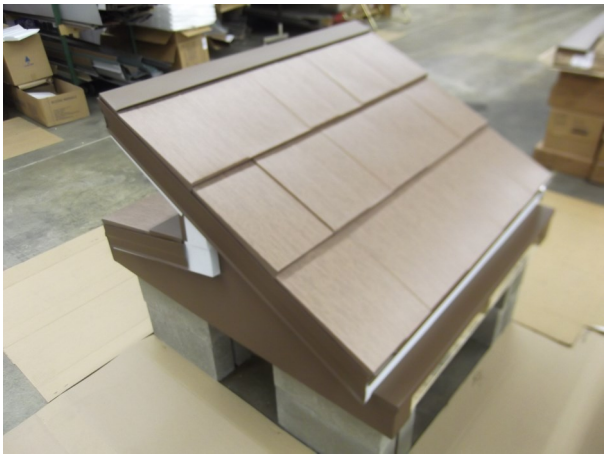


Fig. 1

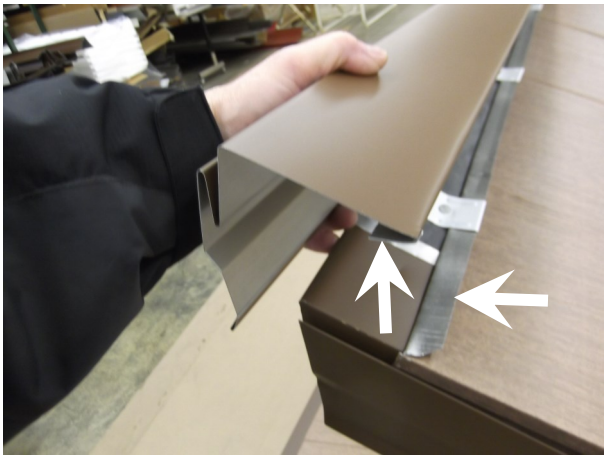


Fig. 2

Fig. 3

Fig. 4

Shed Ridge Cap

A shed roof has only one slope or pitch which falls from a higher to a lower wall. If the Isaiah Industries' 2027 Gable Channel is used on the gables, it is desirable to maintain that profile across the front fascia of the shed ridge for a uniform, classic molded appearance (see **Figs. 3 - 5 on next page**).

The Shed Ridge Cap has a flat, roof-top leg that is 8" long. Since 3/4" of this leg is needed to form an under-turned lock, a maximum of 7-1/4" can be spanned from the peak of the shed ridge down to the edge of the top locks of the last course of shingles.

If the distance is greater than 7-1/4", the shingles can be cut off just short of the ridge and a siding starter cleat can be positioned at a convenient distance down from the ridge (probably about 4"). Alternately, the relatively flat Oxford shingles may be cut off around 4" down from the peak and turned back in a brake to form a new top lock .

After measuring the distance from the shed ridge, leave 3/4' of extra material to form an under-turned lock and cut off the remaining material. Form a 3/4" under-turned hem to lock on to the top lock of the last course of shingles **(Fig.2 arrows).**

About 1-3/8" of material needs to be left at the side of the cap to bend down a side tab into the gable channel **(Fig.3 right arrow).** The face of the cap needs to extend out about 1/4" beyond the tab to cover the profile of the gable channel **(left arrow).**

Figure 4 displays the steps necessary to make a snug-fitting, 2" side lap. Cut a 2" taper in the drip leg of the left cap **(left arrow).** The hem of the right cap needs to be opened up with a utility knife **(bottom arrow).** The right cap's channel will nest inside of the left cap's channel shown at the **top arrow.**

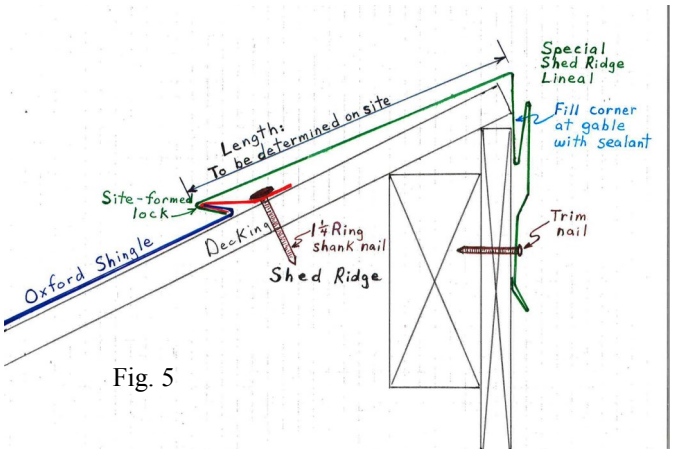


Fig. 5

Shed Ridge Cap cont.

Fig. 1

Apply two parallel beads of sealant on the roof-top leg of the left cap in the 2" overlap area **(Fig.1 arrow).** These should run the full length from the ridge down to the top lock of the shingle to prevent any sideways water intrusion.

Fig. 2

Slide the right cap over the left, making sure that the channels and drip hems are fully nested **(Fig.2).** Wrap the opened-up hem around the taper-cut hem and crimp it shut with your fingers, hand flangers or hammer **(arrow).** The lap should be secured to the fascia with a trim nail and riveted on top. Cover the rivet head with color matching touch-up paint.

Form a corner piece from color-matching coil that will fill the gap left at the intersection of the gable channel and the shed ridge cap **(Fig.3).**

Fig. 3

As seen by the **arrow in Figure 4**, the corner piece should fit all the way up into the folds of the gable and shed ridge lineals. Both lineals should then be fastened to the fascia with color-matching trim nails 1" out from the corner and through the corner fill piece.

The side of the channel in the Shed Ridge Cap at both corners of the roof must be filled with sealant to prevent any water in the channel from dripping out the ends **(Fig.5).**

The entire length of each Shed Ridge Cap should be neatly face nailed in the lower drip leg that rests against the fascia with inconspicuous trim nails every 2 or 4 feet.

Fig. 4

Fig. 5

Vent Pipe Flashing

Fig. 1

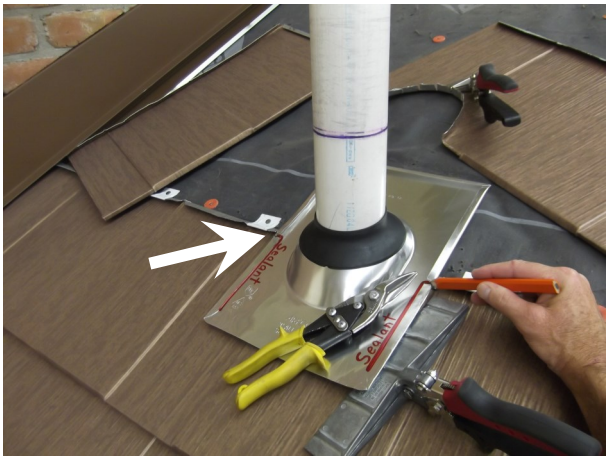


Fig. 2

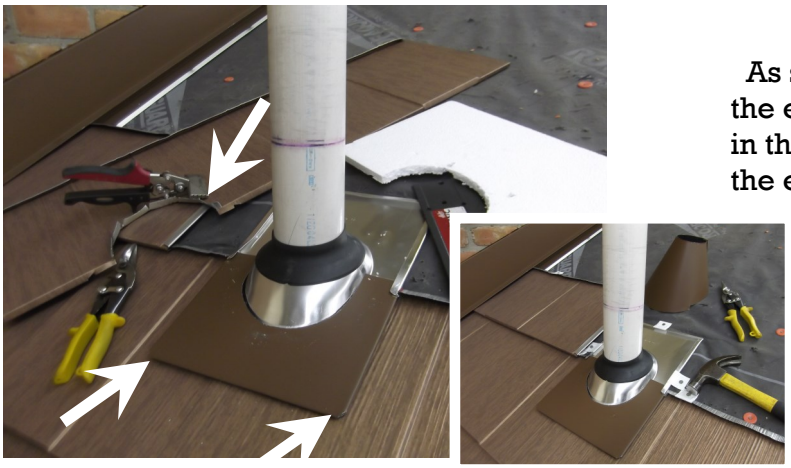


Fig. 3

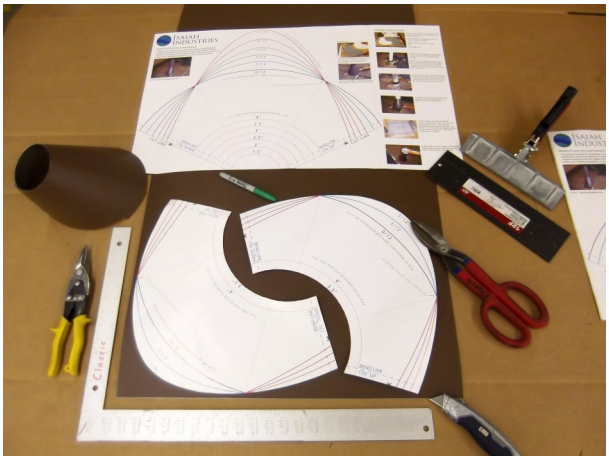


Fig. 4

Typical neoprene boot flashings used on vent pipes will eventually break down under UV radiation from the sun. To ensure a lifetime of protection against water infiltration around pipes as well as adding color-coordinated appeal, a protective cone should be fabricated from coil to cover all neoprene boots. In every box of coil from Isaiah Industries is a template for attractively flashing around the entire pipe assembly. Here is a slightly abbreviated version of the included instructions.

Figure 1 displays pieces for making the external cladding. Clockwise around the pipe is seen the cone with anchor tabs, foam insert, folding tool, instructions with pattern, pipe sleeve, and cover for flashing the pan. If anchor tabs will be riveted to the shingle, **foam inserts** are a must over the flashing pan to keep it from being punctured when drilling the rivet holes.

Begin by using a folding tool to bend 3/8" flanges in the sides and top of the **flashing pan** to channel any water downward **(Fig.2).** Snip and flatten the shingle's top lock under the pan. Snip the flanges of the pan in line with the shingle top lock **(arrow)** and crimp them flat below this snip.

As seen in **Figure 3**, form a **cover** that will wrap over the exposed portion of the pan. Cut a circular opening in the shingle to be installed above the pipe and turn up the edges that will fit around the neoprene boot **(top arrow).** Snip diagonal drain openings the bottom two corners **(bottom arrows).** Attach the pan to the roof with three nailing clips **(inset).**

Using the Vent Pipe **Cone** Template, cut out the pattern that corresponds to the desired pipe diameter and the roof slope as indicated **(Fig.4).** Be sure to leave four 1"x1" anchor tabs on the bottom edge if it is desired to rivet the cone to the upper shingle (pictured and explained on the next page).

Using a folding tool, bend two, opposite folded, 3/8" hems on the opposite sides of cut-out coil that will lock together at the back of the vent pipe. Trim the cone top only as necessary to fit snugly over the pipe.

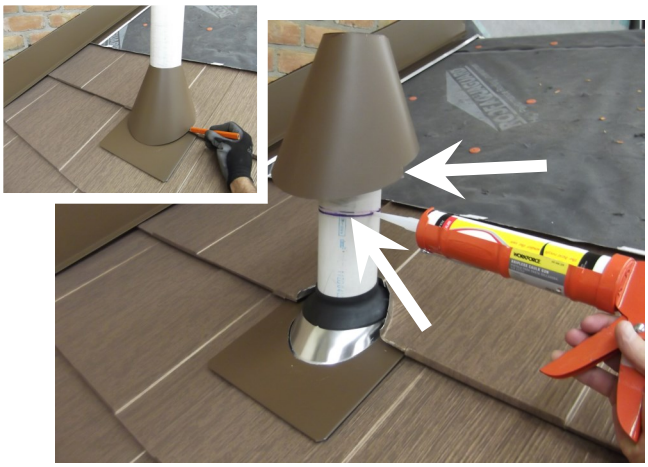


Fig. 5

Fig. 6

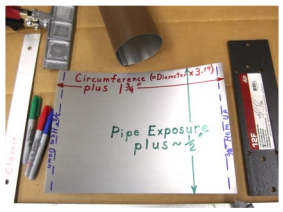


Fig. 7

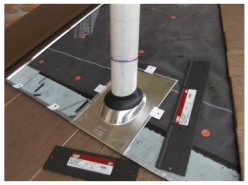


Fig. 8

Vent Pipe Flashing cont.

When the cone straddles two courses, mark the point of the step down on both sides of the cone **(Fig.5 inset).** Remove the cone and cut off a band of material equal to the height of the shingle butt from these marks to the back of the cone **(top arrow)** leaving material for anchor tabs **(Fig.6)** if desired.

With the cone against the shingles, mark the circumference of the pipe at the top of the cone **(bottom arrow).** Lift the cone and apply a thick bead of sealant all the way around the pipe just above the mark. Push the cone down over the sealant and against the shingles.

Figure 6 shows the cone with integrated anchor tabs. These are recommended in areas of heavy snowfall or high winds. Make four 1"x 1" tabs on the back half of the cone as the pattern is being cut out. Drill holes for 3/16" rivets centered on the tab. It is best to apply the rivets as each hole is drilled with sealant between the tab and shingle.

Form a **sleeve (Fig.7 & inset)** from color-coordinated coil to fit over the exposed portion of the pipe plus 1/2". The cut-out coil should be 1-3/4" wider than the circumference of the pipe to allow for locking.

Using a folding tool, bend a 3/8" upturned hem at one end of the sleeve and a 3/8" under-turned hem at the other end. Roll the sleeve gently to produce a cylindrical sleeve without creases. Hook together and slide fully over the pipe.

Apply ample sealant between the top of the pipe and the sleeve for the complete circumference. Also apply sealant to the circumference of the cone-shingle joint, allowing for drainage of any moisture at the lowest 2" of the cone-pan joint.

Figure 8 shows a **mid-shingle installation** with the pan completely under the shingle. As shown in the **inset,** the pan must extend far enough to be hemmed over the top lock of the shingle below it. If the pan falls just short, an under-lapped, sealed extension can be formed from coil to achieve this.

Two or three 1" drain slots must be cut in the butt of the shingle that will go over the hem of the pan.

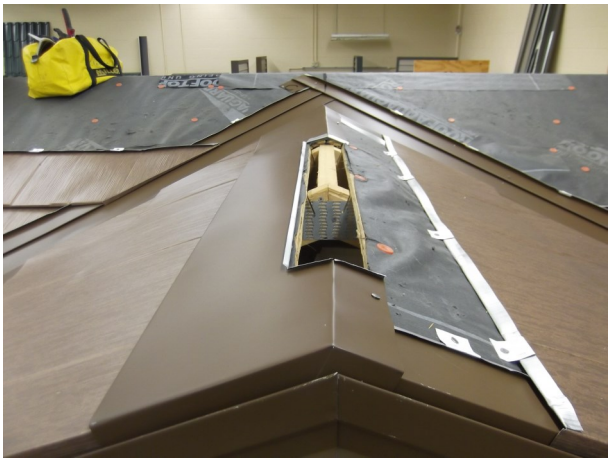


Fig. 1

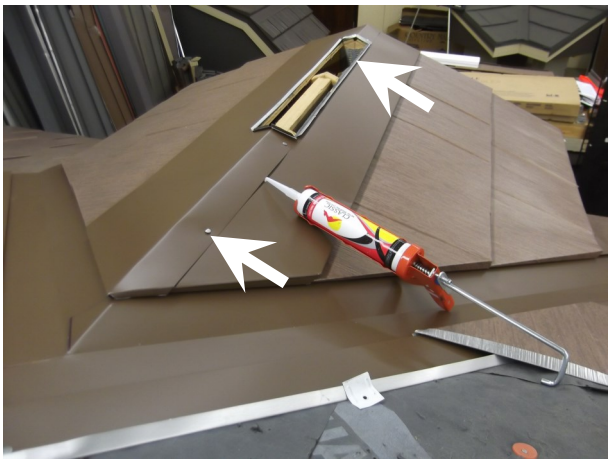


Fig. 2

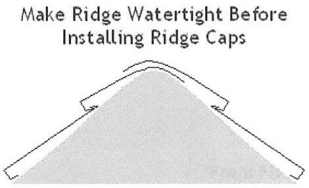
Fig. 4

Fig. 5

Ridges

Ridges must be made watertight before Ridge Caps (2007) are installed. There are three methods for accomplishing this:

1) Bend shingles over the **non-vented** ridge from both sides and attach (**illustrated below left**).



Bend Shingles Over Ridge

Field-Form a Two-Piece Flashing
(Can Be One-Piece with Precise Measuring)

2) Form a one piece flashing with 1/2" under-turned hems that snap over the top locks of the shingles on both sides **(Fig.3).** Ridge Cap fasteners will secure the flashing in place.

Fig.3

3) Form two flashings with 1/2" under-turned hems that then extend over the ridge by 2", set the second flashing in sealant and nail (**Fig.1, 2 bottom arrow**).

For **vented ridges**, form 3/8" water stops around vent openings to prevent wind-driven rain intrusion (**upper arrow**). On long ridges, overlap additional flashings by 2" and seal.

For installation of a **Ridge Vent,** a ridge opening will need to be cut with a circular saw. Make sure the blade depth is not so deep as to cut into the rafters. A 2x4 nailed parallel to the ridge can provide a handy guide for cutting (**Fig.4**). Underlayment should be run right up to the opening before installing flashing and ridge vents. A typical opening size is 3"and stops at the wall line on gable ends.

Ridge Cap installation occurs over a sealed ridge or on top of 4' rigid, plastic ridge vents **(Fig.5).** These vents should be attached with 2" stainless steel screws through the provided holes.

It is probably best to extend the plastic vents all the way to gables and valley cleats (even though the ridge opening will not) to avoid having to step the ridge caps up or down. (**Fig.7**, next page).

Ridges cont.

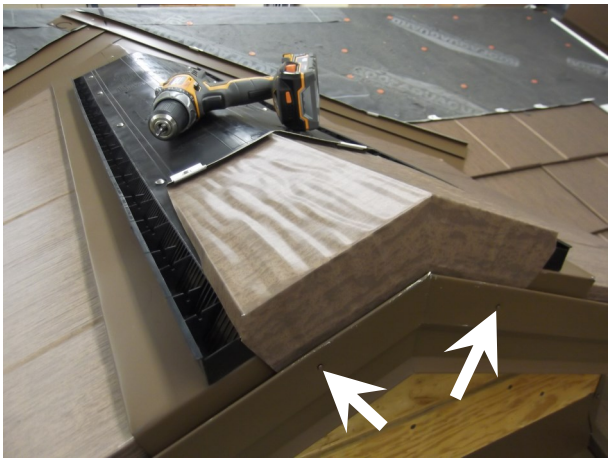


Fig. 6

Fig. 7

Fig. 8

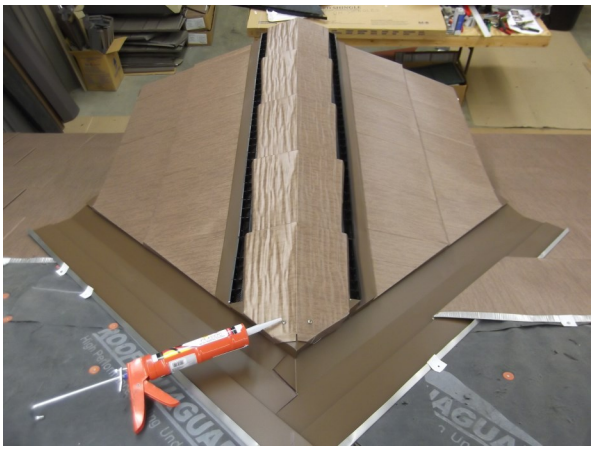


Fig. 9

Fold each cap along its center line to mirror the roof pitch. **Fig.6** shows the butt of the first ridge cap re-formed to be fully inserted into the gable channel. Two trim nails are then face nailed at the **arrows** to secure the cap in the channel. Each subsequent cap is then firmly engaged and fastened with 2" screws through two nailing clips. Use lines on the plastic vents to keep the caps straight and centered.

Normally caps are run one direction, often facing into the prevailing wind. Caps may also be started at both ends of a ridge and lapped in the center to give a symmetrical "bow tie" appearance at the center. The upper, lapped cap is then face-nailed and sealed **(see next page, Figs. 10-11).**

At the intersection of a ridge and valley, trim the plastic ridge vent along the line of the Z fold in the valley **(Fig.7). Note**: Any fasteners used near the Z fold must be far enough back not to penetrate it.

Figure 8 shows a field-formed end cap that will prevent infiltration of insects or snow at the outer edges of the cut ridge vent **(arrows).** Attach with 2" stainless steel screws outside of the valley Z folds. Note the final ridge cap **(left arrow)** that has been modified to fit over the end cap and insert into the Z folds.

Figure 9 displays a completed dormer roof. Face screw and seal the final cap just back from the Z fold. Note the exposure of the color-coordinated coil stock. If this look is not desired, an extra, short course of shingles can be installed on both sides of the ridge before applying the Ridge Vent and Caps.

If the plastic vent is substantially wider than the Ridge Caps, the exposed plastic can be covered with coil for protection and aesthetic appeal.

Fig.10

Fig. 10 captures the profile view of a dormer with a typical plastic ridge vent.

Fig. 11

Fig. 12

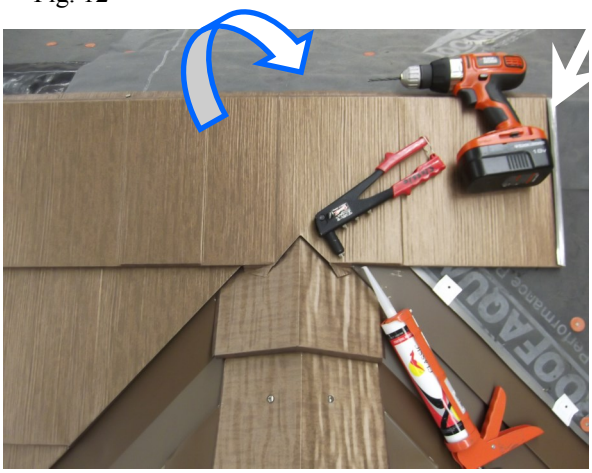


Fig. 13

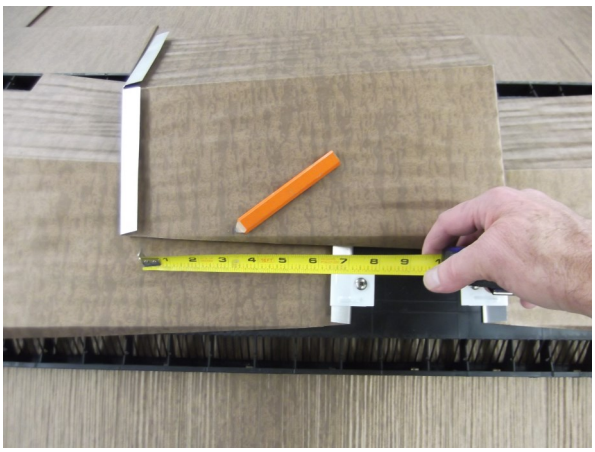


Fig.15

Ridges cont.

Figures 11 through 14 displays an alternate treatment for tying ridge caps into a valley. In **figure 11** the second to last ridge cap has been face-screwed just before the Z cleat below and sealed **(arrows).**

The last ridge cap is cut to fit under the opposing Z cleat and bent up slightly to mirror the roof pitch. Fill the Z cleat with sealant before re-inserting the cap.

Figures 12 and 13 show a shingle installed over the top of the last ridge cap. A "V" is notched into the butt of the shingle and tabs are folded out from the butt to be riveted to the ridge cap and sealed **(arrow).**

Notice that the top shingle in **Figure 13** is bent over **(top arrow)** the main ridge and fastened. If the shingle from the other side of the ridge is able to be installed likewise, the ridge will be watertight and will be ready for direct installation of ridge caps. The side locks of each panel will need relief cuts along the ridge line to lock together when bent **(arrow).**

Figure 14 profiles a dormer with the Oxford ridge caps installed across an open valley.

Fig. 14

Ridge Cap "Bow Tie"

Ridge caps can be installed inward from each end of the ridge and lapped at the center as seen in **Figure 16.** As shown in **Figure 15**, cut off half of the distance overlapped by the last cap, hem the cut end under 3/8" , face nail and seal.

Fig.16

Note: this treatment may not look good if the last two caps end up too short.

Hips into Ridge

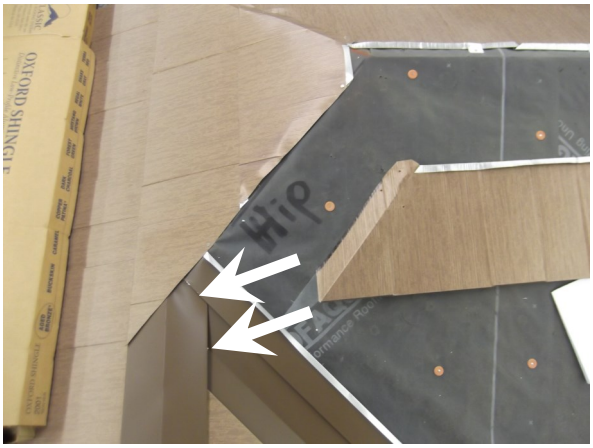


Fig. 1


Fig. 2


Fig. 3


Fig. 4

The next two pages will detail a common, complex hip/ridge situation in which both ridges are vented.

Figure 1 shows the lower ridge being covered with coil where there is no vent opening as it terminates into the valley. Notice that the ridge coil is run over the open valley and tucked into the Z fold on the opposite side **(top arrow).** It is hooked to the top lock of the shingles on both sides of the ridge with under-turned flanges. The flange on the valley side can be snipped and turned down over the open part of the valley as an insect stop (bottom arrow).

In **Figure 2** the plastic ridge vent is likewise run across the valley to provide a continuous horizontal surface for the ridge caps approaching the hip. The ridge vent is attached using 2" stainless steel screws.
Note: Lower shingles omitted for manual photos here.

Once the ridge caps are run across the top of the valley into the hip it will be necessary to redirect the caps to head up the hip. This redirection is begun by the attachment of a cleat made from siding starter positioned perpendicular to the hip line and centered on it as seen in **Figure 3 (arrow).** Make the cleat 10 to 12" wide, bent in the center and attached with two appropriate fasteners.

Note: Siding starter can be made from eave starter by cutting the drip leg off at the 90 degree bend.

Figure 4 profiles the transition. Notice that the last cap on the ridge has been tapered with hand flangers and tucked into the top lock of the shingle below it to provide extra anchoring and resistance to insect infiltration **(arrow).**

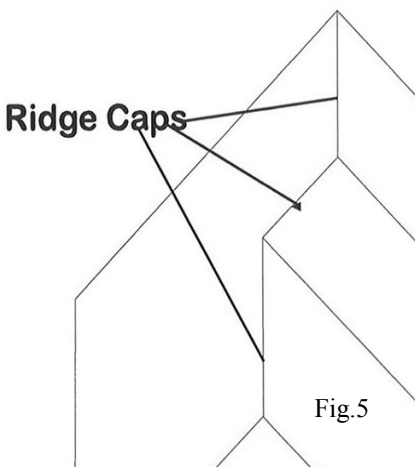


Fig.5

Figure 5 illustrates a similar situation in which the two ridges are at different elevations and connected by a hip but are parallel instead of perpendicular.

Hips into Ridge cont.

Fig. 6

As seen in **Figure 6**, continue to run the ridge caps up the hips with four attachment clips per cap. Make sure the center fold of the caps on each side of the direction change line up **(arrow).**

Remember that the butts of each shingle course must be flattened to allow the cap to sit as tight to the deck as possible. For aesthetic reasons, be careful not to flatten the shingles more than a very short distance outside of footprint of the cap.

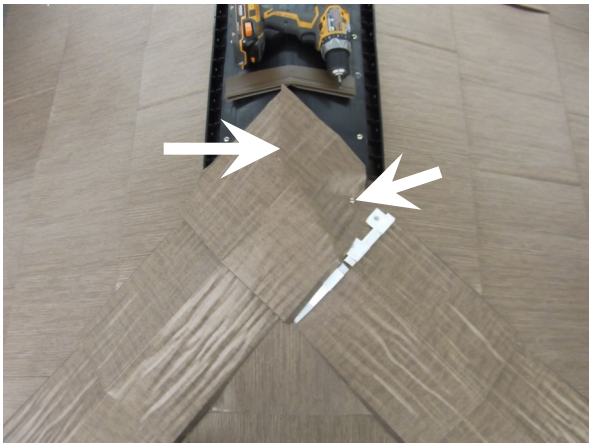


Fig. 7

In **Figure 7** the **left arrow** points to a relief cut in the ridge cap along the ridge line that allows both sides of the cap to sit flat on the vent. At the **right arrow** a screw secures the cap and closes the gap next to the plastic ridge vent.

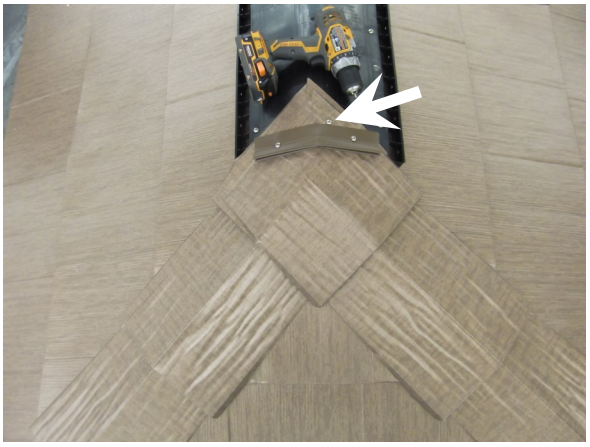


Fig. 8

Figure 8 shows the second lapping ridge/hip cap, also with a relief cut along the ridge line, fastened with a screw through the ridge vent (**arrow**). Attach a cleat through the caps and ridge vent with 2" screws perpendicular to the ridge line .

Highlighted in **Figures 9 and 10** is the completed, complex hip-ridge installation.

Fig. 9

Fig.10

Turret or Cupola Cap

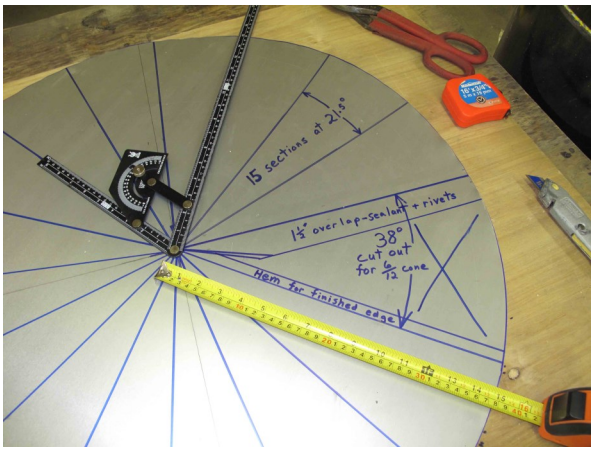


Fig. 1

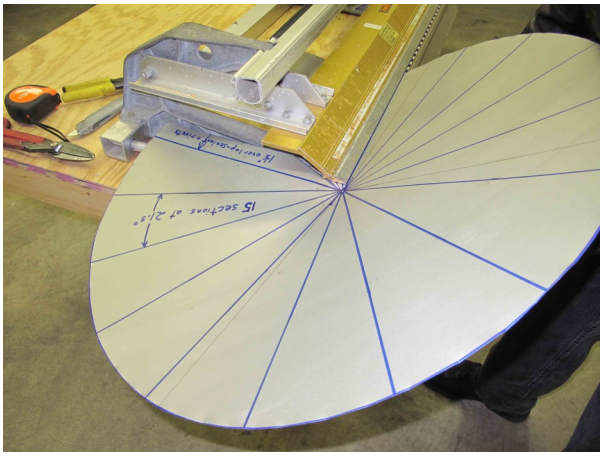


Fig. 2

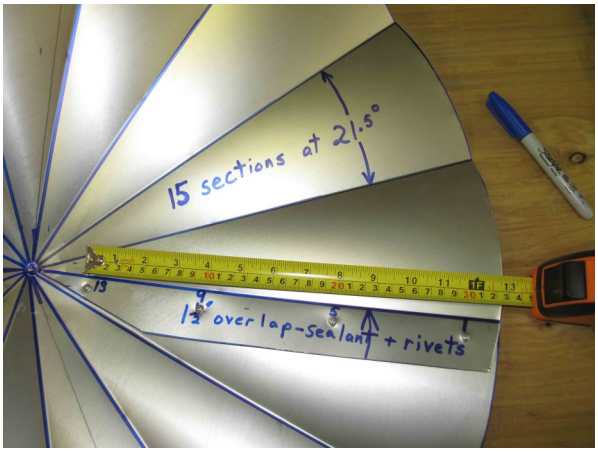


Fig. 3


Fig. 4

A field-formed cap will need to be fabricated to top a turret or cupola as seen in **Figure 4**. Determine the desired radius for the cap, draw a corresponding circle on the coil and cut out with tin snips. Consult the table at the bottom of this page and find the row representing the appropriate roof pitch.

On the underside of the cap, use a protractor to mark out the number of degrees of overlap that will produce the desired conical pitch. Divide the remaining degrees of a 360 degree circle by the number of sections desired for the cap as seen in **Figure 1**. For example, as seen in the table, to produce a cone with a 6/12 pitch, subtract 38 degrees from 360. The remaining 322 degrees is then divided by the number of sides desired in the cap. If 12 sides are needed, each section will be about 27 degrees wide.

Cut out most of the 38 degree section, leaving a 1 1/2" flap for attachment to the back of the adjacent section on one side and a 3/8" bend over hem on the other **(Fig.1).** Crimp the 3/8" hem closed for appearance and strength.

Using a portable brake, bend each hip line slightly, moving successively around the circle. Half of the cap will need to hang off the end of the brake **(Fig.2).**

Lay the cap right-side up and apply two beads of sealant to the overlap. Clamp the overlap section under the adjacent section to form the cone.

Drill 3 or 4 rivet holes, 3/4" in from hip line and up from the perimeter in evenly space increments. Fasten with rivets **(Fig.3).** Color match exterior heads of rivets with touch up paint. Using hand flangers, turn the edges 90 degrees down between the hip lines to form scalloped drip edges.

Lay cap top down on non-scratching surface and drill one 1/8" hole centered in each section and 3 1/2" up from the perimeter. Center and attach the cap to the peak with 1" stainless steel screws driven through a dab of sealant (**Fig.4**). Be careful not to crease the cap by overdriving the screws.

Multi-Sided Conical Cap Formation

Pitch x / 12	Degrees of Incline	Degrees to be Subtracted from 360	Degrees to be Included out of 360	Divided by the # of Sides	Equals = Degrees per Section
3	14.0	10.9	349.1		
4	18.4	18.6	341.4		
5	22.6	27.6	332.4		
6	26.6	38.0	322.0		
6/12	Example	38.0	322.0	8 Sides 12 Sides	40.25 Degrees 26.83 Degrees
7	30.3	49.0	311.0		
8	33.7	60.4	299.6		
9	36.9	72.2	287.8		
10	39.8	83.4	276.6		
11	42.5	94.7	265.3		
12	45.0	105.4	254.6		

Slant-Back Static Vents

Static vents mounted near the ridge should be manufactured out of aluminum to be compatible with Oxford shingles. Do not use plastic vents which can grow brittle over time and do not allow flanges to be bent to stop sideways water migration under the shingles.

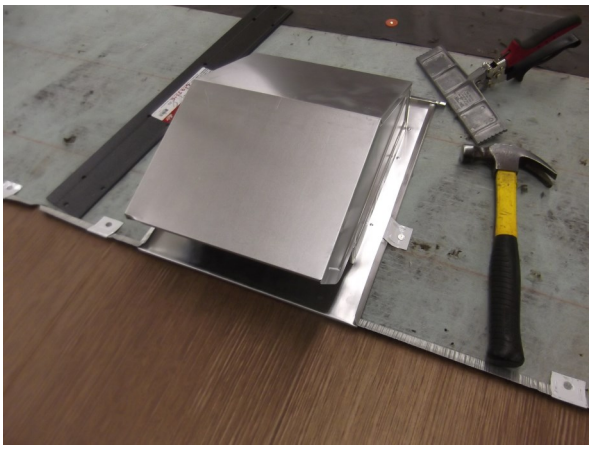


Fig. 6

As seen in **Figure 6**, use a folding tool with a 3/8" channel to form an under-turned lock on the bottom of the vent pan and upturned flanges on the other three sides. This detail is essentially the same as for vent pipe flashing and can be viewed in that section. Use three nail clips to attach to the deck.

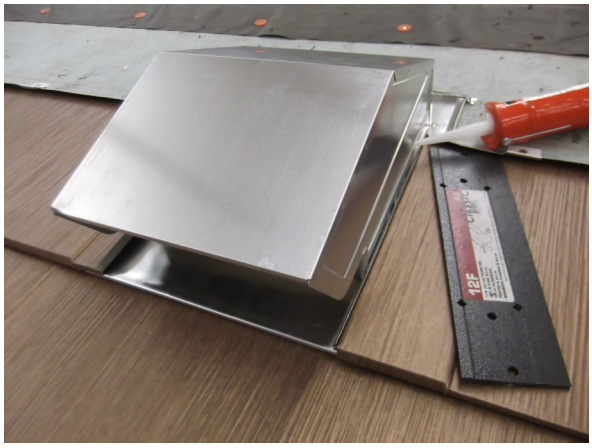


Fig. 7

Shingles can be installed as seen in **Figure 7** with the edges turned up with a folding tool for even greater water infiltration protection. Sealant can then be run in a trough next to the vent. Install shingles above the vent as seen in **Figure 8.**

Fig. 8

For maximum water-tightness, fabricate a **diverter** from coil as seen in **Figures 9 and 10.** The diverter should extend from the top of the vent all the way into the top lock of the shingle on which it rests and be sealed on its sides.

Form 45 degree "dog ears" with coil bent back to cover the unpainted backside. Seal along all edges and attach to top and sides of vent with 1/2" stainless steel screws **(arrows).**

Fig. 9

Fig.10

Perma-Vent

Fig. 1

Perma-Vent incorporates a two piece system mounted on Z cleats that includes internal baffles which promote positive airflow while providing secure protection against wind driven rain and snow.

Apply sealant, butyl tape or a 2" wide strip of Ice and Water Shield with its inner edge flush with the ridge opening. Place the Z Cleat (462) with its upper, top leg perpendicular to the ridge vent opening (**Fig.1 & 2 arrows**). Check to make sure that the Ridge Vent Base (460) will set on the upper leg of the cleat in the appropriate position **(Fig.2 left arrow). Do not block the baffle openings with the Z cleat.**

Fasten the Z Cleat to the roof using stainless steel screws of adequate length to penetrate the roof decking every 12" O.C.

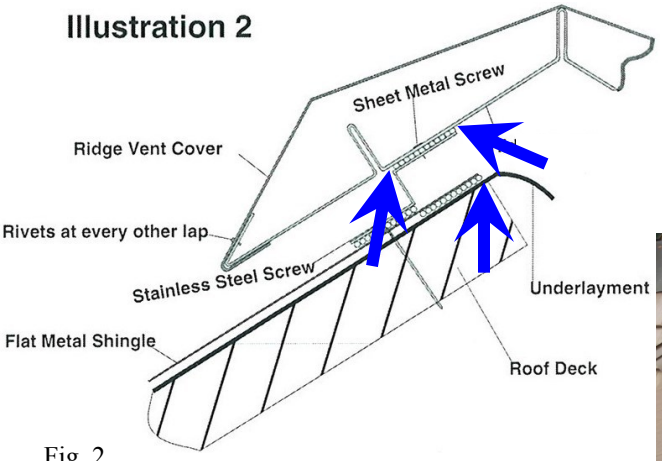


Fig. 2

Fig.3

Apply sealant to the top leg of the Z Cleat and then place the Ridge Vent base squarely over the Z Cleats and attach with stainless steel screws 12"O.C**. (Fig.3 arrows).**

Install subsequent pieces of Z Cleat and Ridge Vent base prior to installing the Ridge Vent Cover. Make sure all pieces are aligned and butted together.

Fig. 4

The Ridge Vent Cover (461) is installed by snapping it over the Base, making sure that it is firmly locked on both sides **(Fig.4).** Subsequent pieces of Ridge Vent Cover should be lapped by 2". Seal between the overlapped pieces. Secure the overlapped pieces at every joint to each other and to the base flange with 1/2" S.S. screws.

Fig. 5

Ends of the assembly can be closed with a field-formed cap made from matching coil stock or with down turned tabs extending from the cover as seen in **Figures 4 & 5 (arrows).**

If forming a cap, cut it to fill the opening, allowing an extra 3/4" of metal on all sides to be bent 90 degrees toward the middle of the roof. Insert these tabs **under** the Ridge Vent Cover and secure with 1/2" S.S. screws. Seal or paint all exposed fastener heads.

Fast Jacks® Photo Voltaic Attachment

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Isaiah Industries suggests the use of a rail-type mounting system for solar panel installation that is attached to the roof framing by a roof stanchion with a concealed lag screw. The photos on this page show the installation of the Fast Jack® roof stanchion. The use of a 3.5" x 5.5" stainless steel base plate which can be purchased from Isaiah Industries is required to distribute downward force and ensure a watertight seal.

All stanchions must be anchored into roof rafters and will often be spaced every 4' O.C. horizontally. Since most Isaiah Industries' shingles have a 1' vertical exposure, the spacing up the slope of the roof will be in some whole multiple of 1', with 4' being a common spacing. After finalizing the appropriate layout, chalk lines to locate stanchion attachment points.

If the stanchions are being installed at the same time a new Isaiah roof is being installed, the use of foam inserts is recommended to increase walkability. With the base plate fully inserted up into the top lock of the shingle and centered on the rafter **(Fig.1),** drill a 3/16" pilot hole centered in the base plate, through the shingle and 2-3" into the rafter **(Fig.2).** Fill the hole with sealant.

Remove the base plate and apply sealant liberally around the full perimeter of the plate and reposition it on the shingle. Likewise, cover the bottom of the FastJack® base with sealant, place in position and insert the 5/16" lag screw. Tighten the lag screw completely with a 1/2" socket driver **(Fig.3).**

Thread the stanchion post into the base of the FastJack® and tighten with adjustable pipe pliers **(Fig.4).** Continue to install Isaiah Industries' shingles with the appropriate stagger pattern making sure to fully engage all locks as shingles cross the base plate of the stanchion **(Fig.5).**

Fig. 5

Quick Mount® Photo Voltaic Attachment

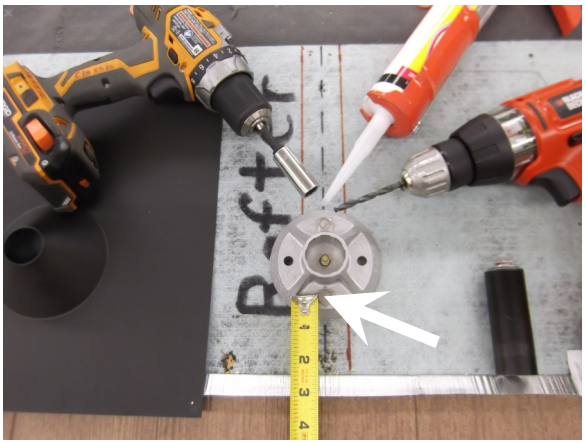


Fig. 1

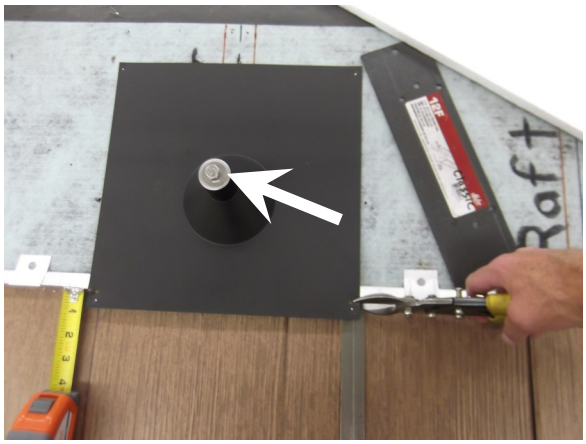


Fig. 2

Fig. 3

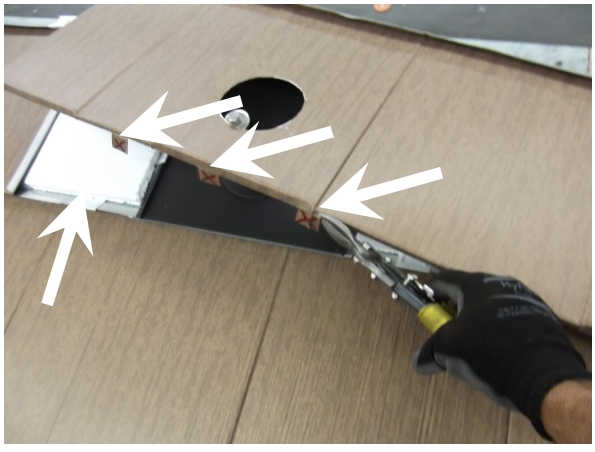


Fig. 4

Center Q Base through two holes directly over a line chalked on a rafter center. The center of the bottom hole **(Fig.1 arrow)** should be 2-1/2" above the top of the Oxford shingle below it. Mark top and bottom hole centers, remove Q Base and drill two 7/32" pilot holes. Fill two holes with sealant, place Q Base (with its captive center bolt seated) over the holes, and secure two lag screws firmly in place.

Screw post **(Fig.2 arrow)** to captive base plate bolt and put flashing in place. About 5/8" should lap over the top lock of the shingle below it. Make 3/8"snips at this bend line, remove flashing and bend an under-turned hem about 150 degrees back.

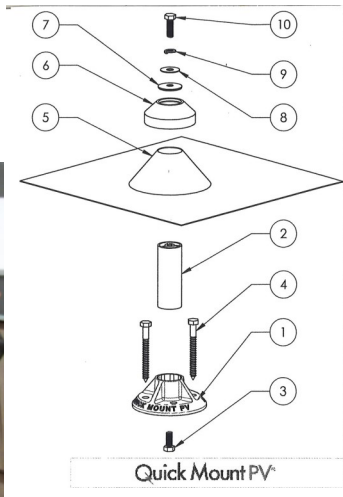
With a folding tool, bend 3/8" upturned water stops back about 135 degrees on the sides and top of the flashing. Remove post, hook flashing to the top lock of the shingle below it and over the Q base. Screw post back in place. Secure flashing to the deck with three nail clips and ring shank nails **(Fig.3 arrow).**

As seen in **Figure 4,** three 1" wide drain slots should be cut in the under-turned lock of the shingle that will be positioned over the flashing **(top arrows).**

Using a 4" hole saw, cut a hole in the shingle that will be centered over the flashing cone. Install foam inserts under the shingles **(bottom arrow)** around the solar installation area to support increased foot traffic.

Apply sealant where post and flashing meet. Install EPDM counter flashing collar **(Fig.5 arrow).** Using the rubber handle of a hammer, make sure the shingle is fully seated before nailing it to the deck with nailing clips **(Fig.5).** Seal top of post with hardware if not installing solar racking right away.

Fig. 5



Calculating Materials

Fig.1

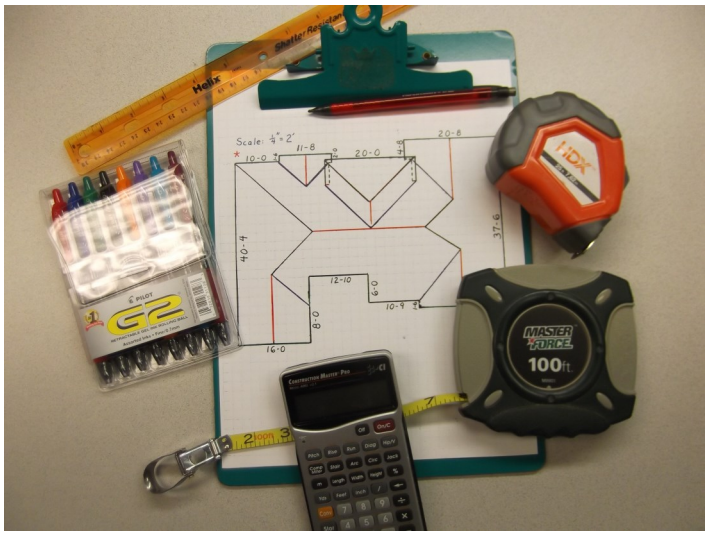


Fig.2

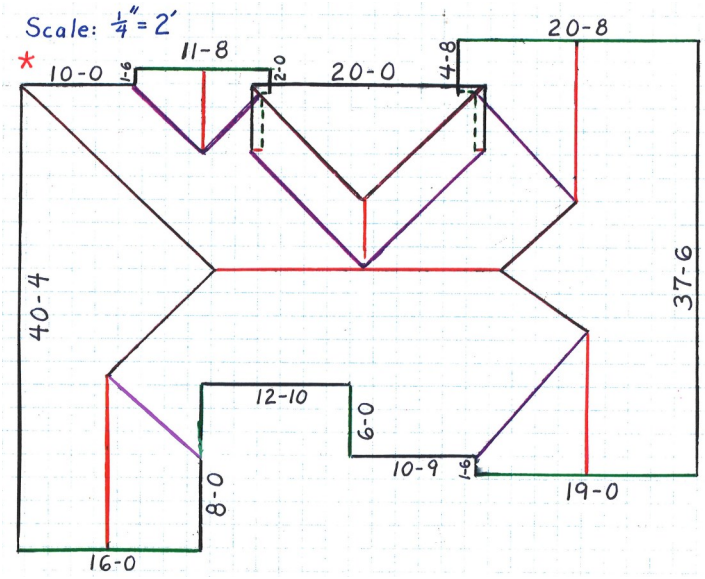


Fig.3

It is necessary to calculate materials (doing a "takeoff") accurately to avoid either shortages, which can stop work, or overages, which can incur extra cost (though some material may be returnable with a restock fee). Measuring to the **nearest inch** along eaves and across gables can be done on the ground but don't forget to include the overhang!

Some roof measurements can also be determined from the ground by knowing the dimensions of the old roofing material. Typical three tab composition shingles have tabs that are a convenient 1' in width and have a vertical exposure of 5". Make sure to physically verify these dimensions by measuring several courses.

Counting shingles, then, can yield an eave to ridge dimension or the distance across a dormer. Likewise, knowing the dimensions of the brick or siding used on the home can be helpful in calculations. In **Figure 1** the roof plane with mold growth is 25 shingle tabs tall and 18-1/2 tabs wide. If the tabs are 5"x12", the gable would measure 10' 5" and the ridge 18' 6".

A 100' tape measure with a grout hook, a 25' tape measure, graph paper with 1/4" squares, a clipboard, ruler, calculator and pencil with a good eraser will be needed **(Fig.2).** Follow these general steps:

1. Sketch roof outline with ground measurements (Fig.3). Knowing the longest dimension of the home will allow choosing an appropriate scale for the drawing on graph paper.

2. Make detailed measurements on the roof when safely possible. Accurately measure and sketch all dormers, hips, valleys, diagonal distances and protrusions. Pipe sizes will be needed to order appropriate flashings.

3. Count units of existing roofing material to calculate lengths in unreachable areas . Binoculars may be helpful here. Also, many dimensions can be determined mathematically simply by knowing run lengths and the roof pitch (see following pages).

If different pitches exist on adjacent sides of a valley or hip, its length can also be determined mathematically by treating the valley or hip as the diagonal (hypotenuse) of a right triangle on the roof plane next to it (see next page).

Calculating Materials

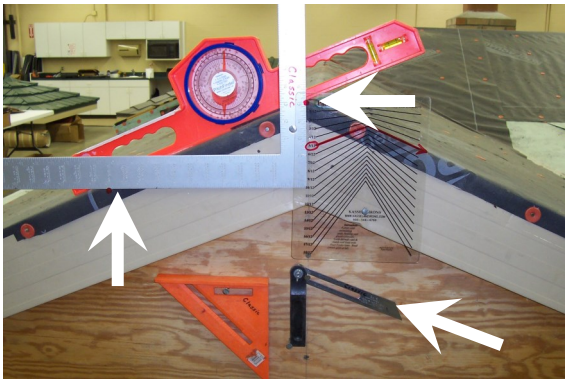


Fig.1

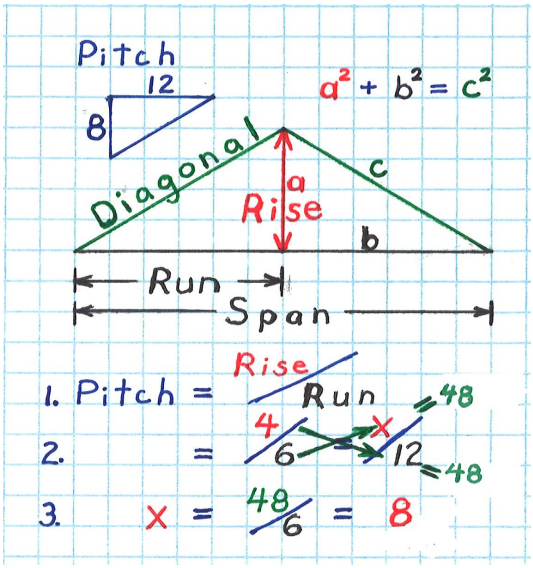


Fig.2

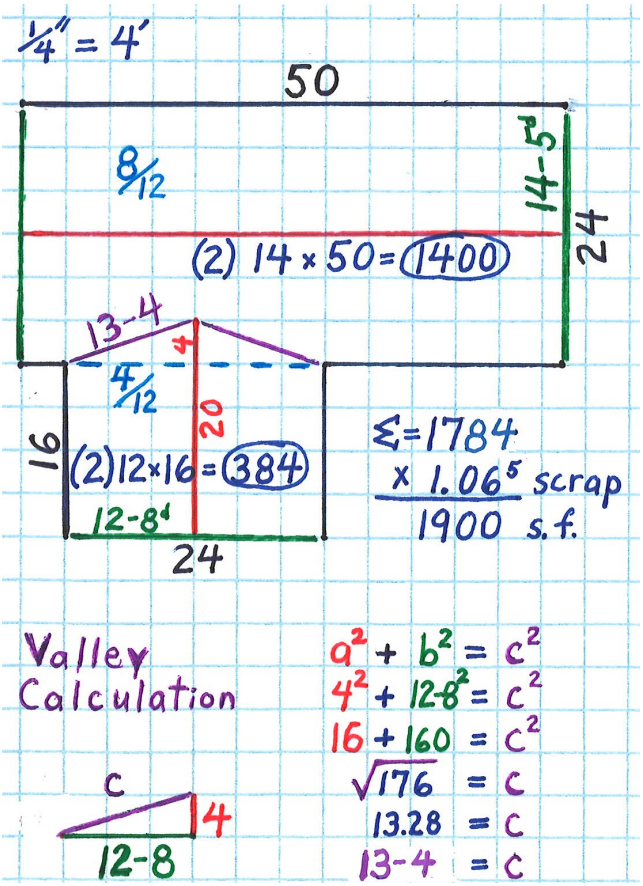


Fig.3

4. Determine roof pitch. Pitch is usually expressed as inches of rise (vertical measure) over 12 inches of run (horizontal measure). **Figure 1** show several instruments that can be used to determine pitch. The arrows pointing to the leveled framing square shows 5" of rise **(top arrow)** for 12" of run **(left arrow).** A sliding T bevel shown at the **bottom right arrow** is a very convenient tool for making repeated marks and cuts at the same angle, as is the orange speed square to its left. A "smart phone" app can also be downloaded that accurately measures roof pitch.

In the gable diagram in **Figure 2** there are 4 units of rise and 6 units of run. This can be converted to units of rise over 12 by understanding that the cross products in step 2 must be equal. Therefore, 4 x 12 must equal 6 x X. Step 3 shows that X must equal 48 divide by 6. Therefore X equals 8 and the pitch is 8/12.

One formula that can be very helpful in calculating distances and, hence materials, is the Pythagorean theorem. It states that if you know the measure of two sides of a right triangle, you can calculate the third side. In **figure 2,** rise squared (multiplied by itself) plus run squared equals the diagonal squared. In the diagram, $a^2 + b^2 = c^2$. If the rise was 4' and the run 6', the formula would be $4^2 + 6^2 = c^2$. Hence, $16 + 36 = c^2$. Then, c = the square root ($\sqrt{}$) of 52. The diagonal (gable) length would be 7.21' or about 7' 3".

5. Calculate simple roof areas. On a simple gable or hip roof, multiplying eave to ridge lengths by eave lengths will give exact areas. But remember that it is generally best to finish up to a ridge or vent opening with coil as opposed to a partial shingle. This allows for the ridge caps or plastic vents to sit against flat coil as well as having a water stop formed into the coil at the ridge opening.

Most Isaiah Industries shingles have a 12" exposure. Rigid plastic ridge vents are generally 14" wide, thus if the distance from the top lock of the last course of shingles to the ridge is about 9" or less it is best to finish at the ridge with coil. Anything more should be an aesthetic call by the homeowner. In **Figure 3,** both gable distances, 12-8 and 14-5, will be rounded down to 12' and 14' respectively.

Area for the roof in **Figure 3** is 1784 square feet. Notice the dashed blue line dividing the roof up into two rectangles. Though there is a small area calculated as 8/12 that is actually 4/12, it should not significantly affect the total.

Notice that the length of the valleys can be calculated by the use of the Pythagorean theorem. Generally, valley metal needs to be at least 12" longer than the actual valley.

Calculating Materials

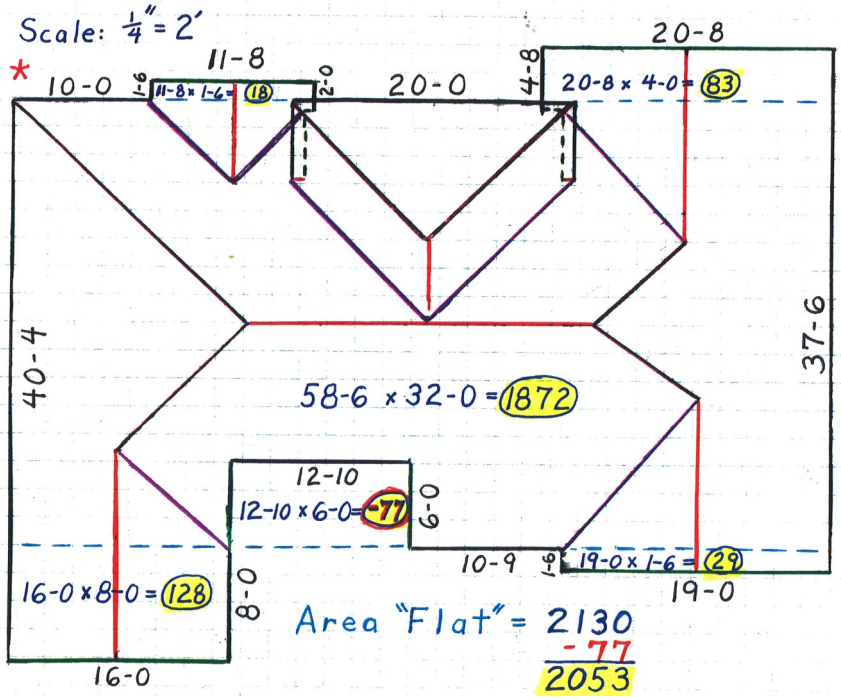


Fig.1

6. Calculate complex roofs by finding the "flat" area and then multiplying by a slope factor. As seen in **Figure 1** with the dashed blue lines, divide the roof up into rectangular areas. Multiply length by width to get the area for each rectangle. Notice that there is one area of 77 s.f. that needs to be subtracted to yield 2053 s.f. total "flat".

Once the total "flat" area is found, consult the table below **(Fig.2)** to find the appropriate slope factor to multiply by based on pitch. Given a 8/12 pitch, the table specifies a 1.202 slope factor and would yield an actual roof area of 2468 s.f. If there are significant areas that are covered by overhang above, these will need to be added. In the example, there are two areas at the top center that add about 7 s.f. of area each.

7. Measure or calculate gable and hip lengths. Notice that the slope factor is also used to determine gable (or any diagonal such as sidewall) lengths when the run length is known. For example, the bottom left gable in **Figure 1** measures 16-0 across from eave to eave and, therefore, has a run of 8 -0. When this is multiplied by the slope factor of 1.202 the gable distance is 9-8. Notice also that this run can be multiplied by the Hip/Valley Factor of 1.563 to get a valley length of 12-6. Record all of these calculations/measurements on your drawing as seen on the next page.

Multiplication Factors for a Known Run and Slope

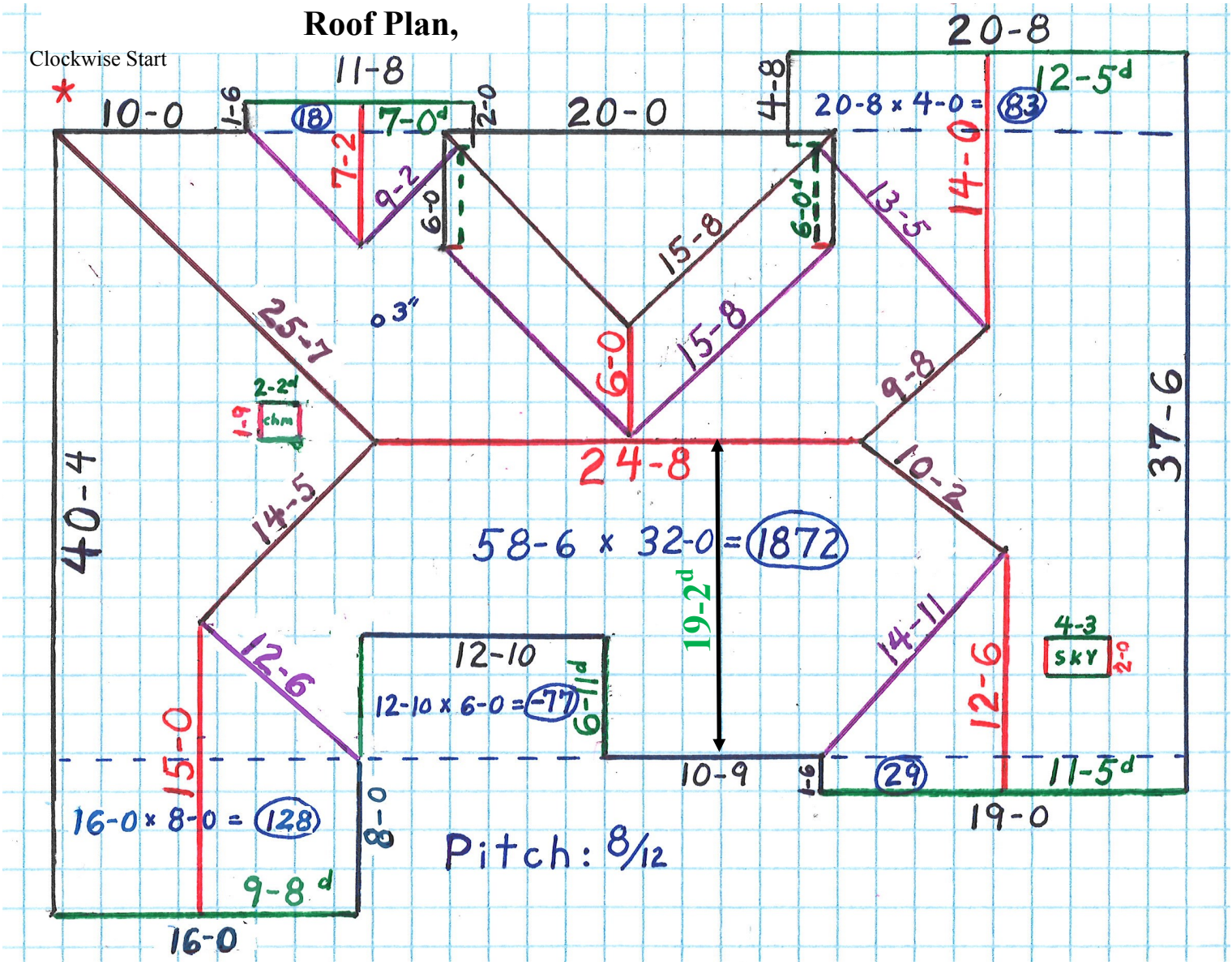
Run = Eave to Center Pt.	Pitch X / 12	Degrees	Slope Factor	Gable or Diagonal	Hip/Valley Factor	Hip or Valley
	3	14.0	1.031		1.436	
	4	18.4	1.054		1.453	
	5	22.6	1.083		1.474	
10-0	5/12 Example		1.083	10-10	1.474	14-9
	6	26.6	1.118		1.500	
	7	30.3	1.158		1.530	
	8	33.7	1.202		1.563	
10-0	8/12 Example		1.202	12-0	1.563	15-8
	9	36.9	1.250		1.603	
	10	39.8	1.302		1.641	
	11	42.5	1.357		1.685	
	12	45.0	1.414		1.732	
10-0	12/12 Example		1.414	14-2	1.732	17-4
	13	47.3	1.474		1.781	
	14	49.4	1.537		1.833	
	15	51.3	1.600		1.887	
	16	53.1	1.667		1.944	

Fig.2

Calculating Materials

Roof Plan,

Clockwise Start



Materials List

Area^	Eave	12' pcs	Gable	12' pcs	Hip	1'pcs/ Courses*	Side Wall	12' pcs	Ridge	1' pcs	Valley	10' pcs
18	10-0	1	(2) 7-0	2	25-7	27/20	(2) 6-0	2	7-2	8	(2) 9-2	2
83	1-6		(2) 12-5	2	(2) 15-8	34/24	(2)~ 4-7	1	6-0	7	13-5	2
1872	2-0		(2) 11-5	2	9-8	11/8	(2)~ 2-6		14-0	15	(2) 15-8	4
29	20-0	2	(2) 6-11	2	10-2	12/8			24-8	26	14-11	2
-77	4-8		(2) 9-8	2	14-5	16/11			12-6	14	12-6	1
128	37-6	4							15-0	16		
= 2053 Flat area	1-6 10-9	1										
X 1.202 = Slope	12-10 8-0	2										
2468	40-4	4										
X 1.134 = Scrap	(2) 6-0	1										
= 2800 s.f.	163-3	= 15	94-10	= 10	91-2	= 100/71	26-2	= 3	79-4	= 86	90-6	= 11

^ Roof area is calculated "flat" and then multiplied by a slope factor (based on pitch) to determine the true area.

* Some Isaiah Industries shingles have individual hip caps that cover one full course instead of one lineal foot of hip.

Oxford Shingle

Part No.	Product	Quantity	Clips
2001	Panel	28	2600
2124	Foam Insert	4	
402	Starter 12'	15	
2007	Hip & Ridge Cap	194	600
2070	Hip Lineal 12'		
2021	Sidewall Flash 12'	3	30
2027	Gable Channel 12'	10	100
2025	Valley - 10'	11	200
c-250	Coil 2'x50'	1	
			T-3530
c-209	Clips, 100/bag	1	
c-210	Clips, 2500 bulk	1	
211	Clips, 250/bag	4	
2028	High Wind Clips		
N-503	1-1/4 Gripshank	10	
N-504	1-3/4 Gripshank		
N-501	1-1/2 Plastic Top	2	
412	Siding Starter		
c-551	Aqua Guard	2	
c-554	MT - Ice & Water	7	
c-284	4 oz. Paint	1	
VP-275	10 oz. Sealant	3	
C-555	Alum. Snowguard	?	
460	Ridge Vent Base		
461	Ridge Vent Cover		
462	"Z" cleat		
L-978	1/2" s.s. screw		
L-978	1" s.s. screw		
L-980	2" s.s. screw	4	
C-551-4	Vent Pipe Flashing	1 (3")	

Fig.1

Oxford Shingle

Part No.	Product	Quantity	Clips
2001	Panel		
2124	Foan Insert		
402	Starter - 12'		
2007	Hip & Ridge Cap		
2070	Hip Lineal 12'		
2021	Sidewall Flash 12'		
2027	Gable Channel 12'		
2025	Valley - 10'		
c-250	Coil 2'x50'		
c-209	Clips, 100/bag		
c-210	Clips, 2500 bulk		
211	Clips, 250/bag		
2028	High Wind Clips		
N-503	1-1/4 Gripshank		
N-504	1-3/4 Gripshank		
N-501	1-1/2 Plastic Top		
412	Siding Starter		
c-551	Aqua Guard		
c-554	MT - Ice & Water		
c-284	4 oz. Paint		
VP-275	10 oz. Sealant		
C-555	Alum. Snowguard		
460	Ridge Vent Base		
461	Ridge Vent Cover		
462	"Z" cleat		
L-978	1/2" s.s. screw		
L-979	1" s.s. screw		
L-980	2" s.s. screw		
C-551-4	Vent Pipe Flashing		

Fig.2

Calculating Materials

8. Fill out a materials list allowing for waste. It is best to figure the number of lengths of a particular lineal needed, such as gable channel, by listing the individual lengths and not just going off of the total number of feet. As seen in the example on the previous page, the total length of gable comes to 94-10 but it would be wrong to conclude that eight, or even nine, 12' pieces would cover all the gables . Ten pieces are needed.

In general, it is best to keep the number of seams in a run to a minimum by using whole lineals rather than using two or three short, cut-off pieces. The materials list in **Figure 1** follows the product description sheets on the next two pages which detail specifications and packaging. Note that the parts are color coded to the diagram. Also note:

1. In this example, 13.4% scrap is allowed in the 28 squares. If 27 squares were ordered the scrap factor would only be 9.4%, which is probably too small given the complexity of the roof. Scrap multiplies when there are a lot of diagonal hips and valleys. In the example, there is a total of 181' 8" of hips and valleys and the example allows for 332 s.f. of scrap - about 1.8 s.f. per lineal foot of hip and valley. Other details included in this scrap factor are the stagger pattern, the bend-over gable application, human error, and, significantly, whether coil or panels will be used in the last few inches below long ridges.

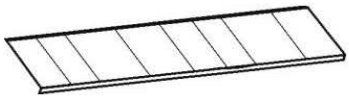
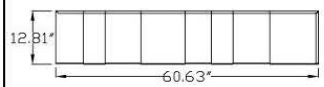
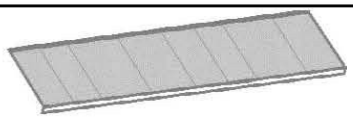
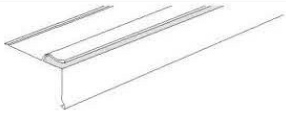
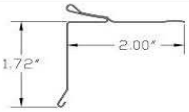
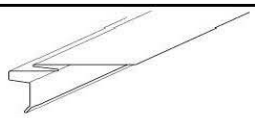
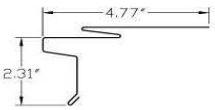
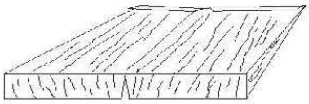
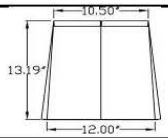
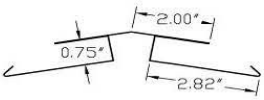
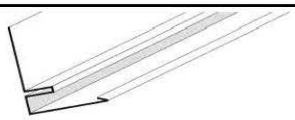
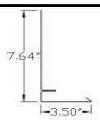
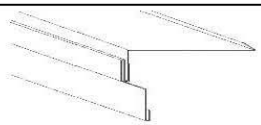
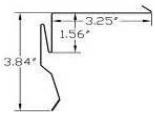
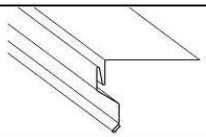
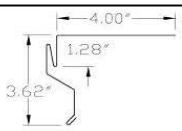
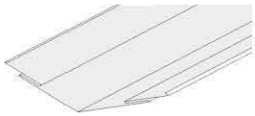
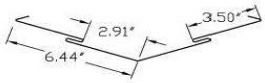
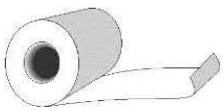
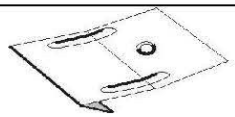
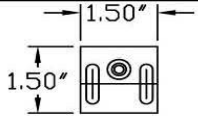
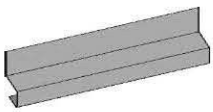
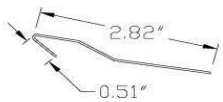
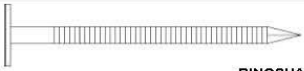
2. Foam inserts are figured for "walkability" on one course on both sides of all ridges as well as for a walk path up to the ridges and around protrusions such as skylights and chimneys which may need future servicing. On "taller" shake profile shingles, inserts are often figured for the entire roof, especially when using roof jacks on steeper roofs. A diagram should be made for the homeowner showing the location of inserts.

3. Ice & Water Shield is only used on bare decking. Two 36" widths are normally used at all eaves and one width in valleys. Narrower strips should be used around protrusions. One roll is 66'10" long and covers almost two square. Aqua Guard is 200'x 5' and covers about 8-9 square with overlaps in the field.

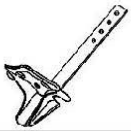
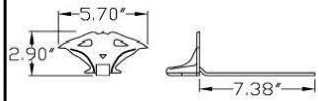
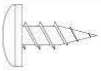
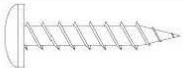
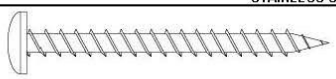
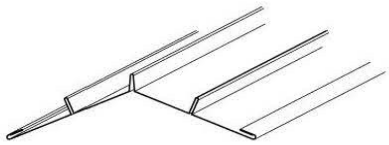
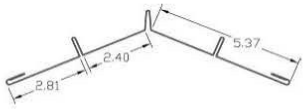
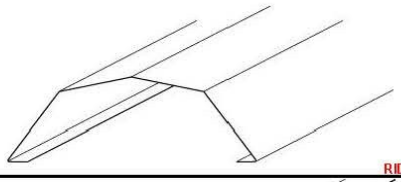
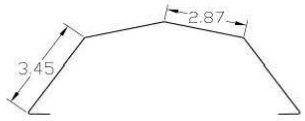
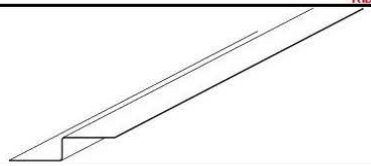
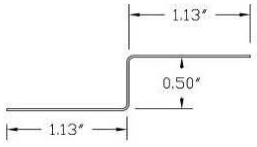
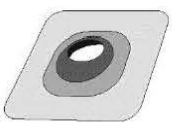
4. Though four clips are used on hip caps, only two are used on the caps when applied at a ridge vent opening. When using rigid, plastic ridge vents, 4.5, 2" stainless steel screws per foot of ridge are needed for the vent plus the caps.

5. Normally one clip is required for every square foot of panel, one per foot of lineals (two on valleys) and on the caps as noted above. There will be one nail per clip and per lineal foot of starter and coil flashing normally. Each box of 1-1/4" ring shank nails contains approximately 418 nails. A blank materials list form is provided in **Figure 2.**

OXFORD SHINGLE

PART NO.	PRODUCT	DIMENSIONS	SPECIFICATIONS & PACKAGING	QUANTITY
2001	 OXFORD SHINGLE		Exposure 12" x 60" Butt height: 5/8" .024 Aluminum Per carton: 20 pieces Coverage: 1 square Gross weight: 42 lbs.	
2124	 POLYSTYRENE INSERT	12" x 30"	40 pieces/square 2 squares/bundle Use 2 pieces per shingle in areas requiring extra rigidity	
SH-402	 EAVE STARTER STRIP		Length: 12' Per carton: 25 pieces 300 lineal feet Gross weight: 42.8 lbs. One-piece starter/drip combination	
ST-R402	 SPEED TRIM STARTER		Length: 12' Per carton: 10 pieces 120 lineal feet Gross weight: 36 lbs.	
2007	 HIP & RIDGE CAP		Exposure 12" Per carton: 40 pieces Gross weight: 42 lbs. Install on ridges and hips. Ridges and hips must be water tight prior to installation	
2070	 LINEAL HIP CAP		Length: 12' Per carton: 10 pieces 120 lineal feet Gross weight: 67 lbs.	
2021	 SIDEWALL FLASHING		Length: 12' Per carton: 10 pieces 120 lineal feet Gross weight: 37 lbs. Roof to sidewall flashing	
2027	 GABLE CHANNEL		Length: 12' Per carton: 10 pieces 120 lineal feet Gross weight: 40 lbs. Fold-over gable flashing	
ST-R2027	 SPEED TRIM GABLE CHANNEL		Length: 12' Per carton: 10 pieces 120 lineal feet Gross weight: 40 lbs. Fold-over gable flashing	
2025	 VALLEY		Length: 10' Per carton: 5 pieces 50 lineal feet Gross weight: 35 lbs.	
C-250	 FLASHING COIL	Weight C-250 = 28#	Width: 24" Per Carton: 1 roll C-250 50 lineal feet C-252 100 lineal feet Matching coil stock for special flashings	
C-252		C-252 = 56#		
C-209	 NAILING CLIP		C-209 ctn 25 - 100 pc bags	
C-210			C-210 2500 pc bulk pack	
C-211			C-211 ctn 10 - 250 pc bags	
2028	 NAILING CLIPS		200 Per carton Used in high wind areas	
C-503	 RINGSHANK ALUMINUM ROOFING NAILS	1 1/4"	Length 1 1/4" Per carton: 50 (1 lb.) boxes Approx. 418 nails per box	
C-504SP	 RINGSHANK ALUMINUM ROOFING NAILS	1 3/4"	Length 1 3/4" Per carton: 50 (1 lb.) boxes Approx. 312 nails per box	

OXFORD SHINGLE

PART NO.	PRODUCT	DIMENSIONS	SPECIFICATIONS & PACKAGING	QUANTITY
C-501	 PLASTIC-TOP NAIL	1 1/2"	Per carton: 2000 Used to secure underlayment apply one nail per square foot.	
C-412	 SIDING STARTER		Length: 12' Per carton: 25 pieces 300 lineal feet Gross weight: 14 lbs. For areas where drip leg is not required	
C-551	 ROOFAQUAGUARD UDLX	60" x 200'	Per carton: 1 roll Coverage: approx 9 squares Gross weight: 42 lbs. Moisture and vapor barrier. For use on properly ventilated structures. Replaces 30 pound felt.	
C-554	 ROOFAQUAGUARD MT	36' X 66'10"	Per carton: 1 roll Coverage: approx 2 squares Gross weight: 74 lbs. Self-adhering	
C-284	 TOUCH-UP PAINT	4 oz	Can: 4 oz Brush on For limited use on products	
C-273	 SEALANT	10.3 oz	Color matched, but not available in Brite Red or Oceanside Blue. Available in clear. Do not apply to damp surfaces.	
C-555	 ALUMINUM SNOWGUARDS		Hold and break up snow to protect plantings and doorways. Unpainted aluminum finish. Color matching at additional cost.	
L-978	 STAINLESS STEEL SCREW	1/2"x #10	Per bag: 100 Truss Head Phillips Drive Screws	
L-979	 STAINLESS STEEL SCREW	1"x #10	Per bag: 100 Truss Head Phillips Drive Screws	
L-980	 STAINLESS STEEL SCREW	2"x #10	Per bag: 100 Truss Head Phillips Drive Screws	
460	 RIDGE VENT BASE		Length: 10" Per carton: 5 pieces Custom-formed to match roof pitch .032" Aluminum Not sold by color (unseen) Use with part #461	
461	 RIDGE VENT COVER		Length: 10" Per carton: 5 pieces Custom-formed to match roof pitch .019" Aluminum Use with part #460	
462	 "Z" CHANNEL		Length: 10' Per carton: 25 pieces .032" Aluminum Not sold by color (unseen) Use with part #460	
C-531 C-532 C-533 C-534	 VENT PIPE FLASHINGS	C-531 1 1/2" C-532 2" C-533 3" C-534 4"	One each aluminum base flashing with neoprene boot. Unpainted aluminum pipe surrounds.	

Core Values

At Isaiah Industries, Inc., we are on a journey to become a "Kingdom Business." Our Corporate Mission is to live into the unique role and opportunity that God gives us to be a world-changer through our daily activity in the marketplace. In so doing, we submit to the need for "banks for the river" which guide our actions and decisions; these are our Core Values.

Honor God

Our Actions Will Consistently Honor God And Support The Growth Of His Kingdom.

Positive Impact

We Will Live Out The Teachings Of Jesus Christ By Focusing On What We Can Give In Every Relationship, Not On What We Can Receive.

Honesty, Fairness, Relationships, and Value

These Core Attributes In All Dealings With Everyone We Encounter Are Inseparable From Who And What We Are – They Are Our "Character" That We Must Embody At All Times.

Economic Development

By Ensuring That Our Products Carry Positive Economic Impact Wherever They Go, We Play A Role In Bringing God's Hope To The World.

Customer Satisfaction

We Achieve Growth Through Quality Products, Personable Needs-Driven Service, And Willingness To Always Go The Extra Mile.

Team Members

We Honor Our Team Members By:
Allowing Them To Share In The Company's Growth And Success.
Evaluating Performance Based Upon Quantifiable Goals And Objectives.
Providing A Pleasant And Safe Workplace.
Encouraging Growth Through Ongoing Coaching And Training.

Collaboration

We Do Not Exist As An Island. Our Corporate Mission Is Achieved Through Maximizing Relationships With Others Including Vendors, Customers, Competitors, And Non-Profit Organizations.

Environmental Consciousness

Through Ecologically Sound Operations And Products, We Are Committed To Being Good Stewards Of The World God Created, Passing It Lovingly On To Future Generations Of His People.

Continual Improvement

We Are Dedicated To Continual Improvement Through Relationships That Encourage And Act Upon Input From Customers And Team Members.

Leadership

Through Stability, Longevity, Care For Others, Product Innovation, And Technological Advancement, We Preserve Our Recognition As An Industry And Community Leader.

ISAIAH INDUSTRIES
Manufacturing & Distribution Companies

CLASSIC METAL ROOFING SYSTEMS

Roof Plan Scale: 1/4" = ___ Slope: ____ Tear Off? __ # of Stories __ Pictures? __
Rooftop and/or Ground Measure? _____ Product _____ Speed Trims? ___
Vent Type Desired _____ Name _____ Address _____
_____ Phone (___)_____ Email _____