



Classic Products, Inc. ClickLock Standing Seam Installation Manual

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Introduction

DESCRIPTION

ClickLock Standing Seam roof panels are 12" wide and .032" thick (nominal).

GENERAL INSTALLATION INSTRUCTIONS

Fastener Specifications

Only use stainless steel screws and only use stainless steel or aluminum pop rivets.

Screws should be long enough so the tip of the screw and at least $\frac{1}{8}$ " of the full shank penetrates through solid decking.

Install 1 clip per foot of panel and at least 2 clips per panel. Attach each clip with at least 2 screws. When attaching the clips, the head of the screw must set tight against the top of the clip.

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

Do not walk on the panels' locks. When work must be done from installed panels, protect the panels with carpet, foam or other nonabrasive material. Take care not to scratch the panels' surfaces. Minimize the use of touch-up paint.

Always keep the uphill portions of flashings on top of the downhill portions to prevent water from running under the flashings.

SUGGESTED TOOLS

Some of the tools that may be needed for the proper installation include:

Hammer
Power saw & mitre
Tin snips
Utility knife
Pop rivet gun
Hand drill
 $\frac{9}{64}$ " drill bits
Hand flangers
Pliers
Scaffolding
Ladders
Tape measure

Chalk line
Portable brake
Caulking gun
Compass
Soap pencil
Extension cords
Safety Glasses
Zip Tool

Remember to follow each tool manufacturer's instructions on safety and maintenance.

SAFETY CONSIDERATIONS

Caution must be exercised when positioning a ladder. Set the ladder to extend at least 36" above the point of support. Set the ladder at an angle so that the horizontal distance from the foot of the ladder to the building is about one fourth of 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, moss growth or dampness that might make the roof slippery, material and equipment that could slip, and extension cords.

Power saws, especially on cutbacks, must be handled with extreme caution, and should be used by only professional, experienced installers. The use of safety glasses is essential not only during cutback procedures but also when cutting panels. Pay attention to the presence of other individuals on the roof.

SLOPE REQUIREMENTS

The minimum roof pitch is 1 1/2:12 (one and one half: twelve).

ROOF TEAR OFF

Assure the homeowner that property will not be damaged during tear off. Workers should employ caution at all times during this procedure.

Dust control is critical when removing old roofing. Old roofing should be placed in barrels, which are then unloaded off the roof into a container located close to the work area.

Before starting a project, check for any obvious interior and exterior damage.

Introduction

Replace damaged or rotted areas with new lumber before roofing.

After the old roof has been removed and any deteriorated lumber has been replaced, install ½" minimum decking. Fasten per local code requirements.

The building inspector may wish to inspect the deck before installation begins. Be sure to comply with local building codes.

ROOF PREPARATION

Existing Asphalt Composition Shingles, Clay Tile, Cement Tile, Wood Shingles, Wood Shakes and metal roofing must be removed before installing decking (if required), underlayment and roofing.

If damage has occurred, remove and replace the damaged material. Remove all roof debris.

SHEATHING & UNDERLAYMENT

The minimum sheathing thickness for new construction application is ½" plywood type sheathing or equivalent.

Follow local codes to anchor the plywood sheathing securely to the roof framing. Inspect the plywood for gaps and weak spots.

The minimum requirement for underlayment is one layer SP-6000 Roof Guard or other approved underlayment.

If asphalt-saturated felt is used as underlayment, it should not come in contact with the backs of the panels. As the felt gets hot it will stick to the backs of the panels. As the panels expand and contract, the panels will tear the felt. If felt is used, a slip-sheet must be installed between the felt and the panels. Resin paper is a suitable slip-sheet.

A minimum 18" vertical and 6" horizontal lap is required. Underlayment should overhang all roof edges and extend up all penetrations at least 1½"

Underlayment should be securely fastened every square foot and the horizontal laps should be fastened every 6 inches using N-501 Plastic Top Nails. The underlayment is fastened as needed to resist tearing or wind blow off. Check the local building code for the underlayment installation requirements.

Around a large protrusion, such as a chimney, skylight or dormer, cut the underlayment to extend at least 1½"

up the protrusion. Where underlayment is cut around any protrusion, apply roofing cement or VP-275 sealant to ensure a watertight seal. It is important to try to do this neatly and not puncture or tear the underlayment.

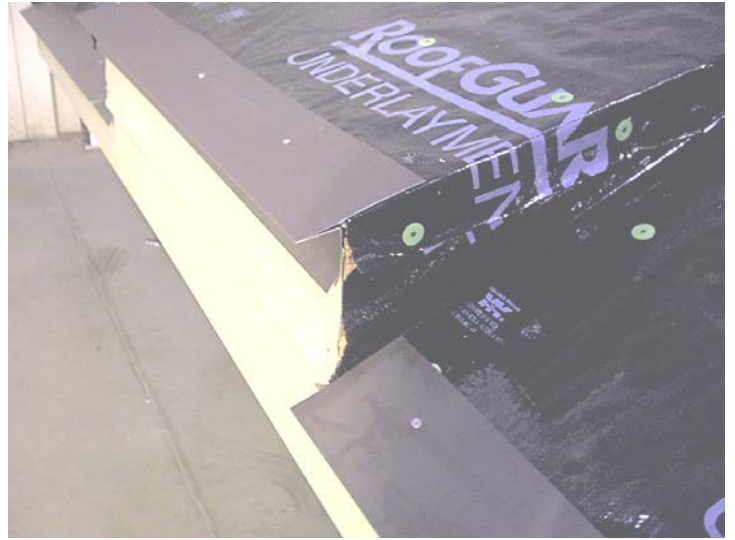
At a valley, run the underlayment completely across so that the courses of underlayment are interwoven and lap at least 6" at the top of the preceding ply, providing double coverage at the valley. The underlayment should conform to the valley to avoid any tears or punctures. Apply a third layer of underlayment with a full width extending the entire length of the valley.

If the underlayment tears or fractures, install patches made of underlayment and roofing cement to seal these areas thoroughly.

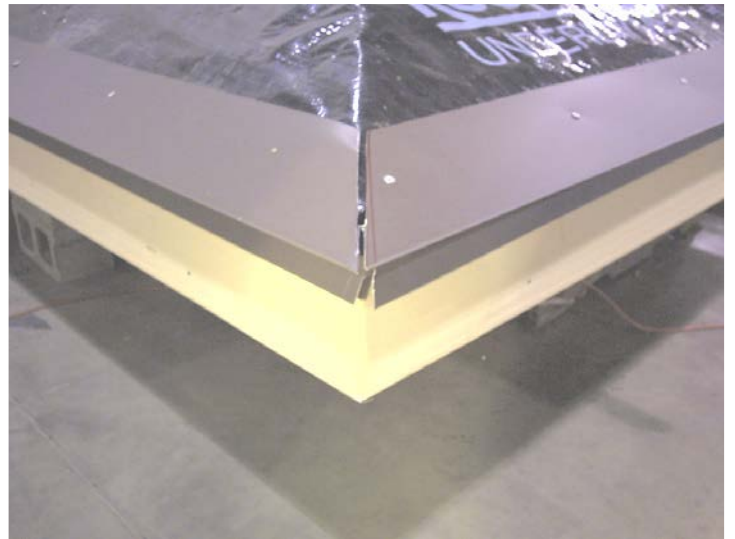
It is critical that the underlayment be installed properly to avoid problems in the future. Metal roofing can develop condensation beneath it during certain weather conditions. The underlayment prevents such moisture from causing a problem.

Starter

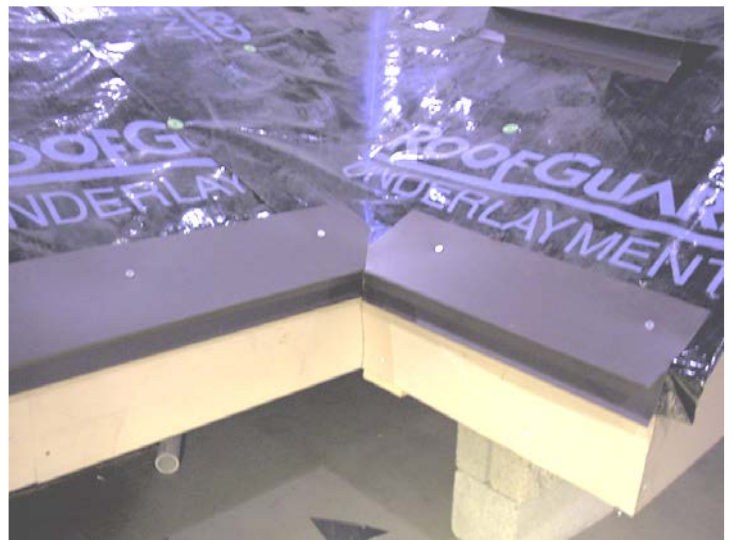
After the underlayment is installed, the starter is installed. The ends of the standing seam panels will lock over the edge of the starter.



At the hip line, cut the top of the starter to the angle of the hip. Keep the gap between the pieces as small as possible. When cutting the pieces at the hip, leave some extra metal on the drip face of the starter. The extra material will wrap around the corner of the hip and cover the gap between the pieces.



At an inside corner, set one piece of starter into the corner and trim it to the corner angle. Set the next piece in place and cut it to fit against the installed piece. Form a tab on the starter's drip face to cover the corner gap.



Starter

When lapping the starter, remove 4" of the folded edge of the starter where the panels lock. Open the drip hem of the installed starter. Removing this piece and opening the drip hem will allow the panels to slide together.

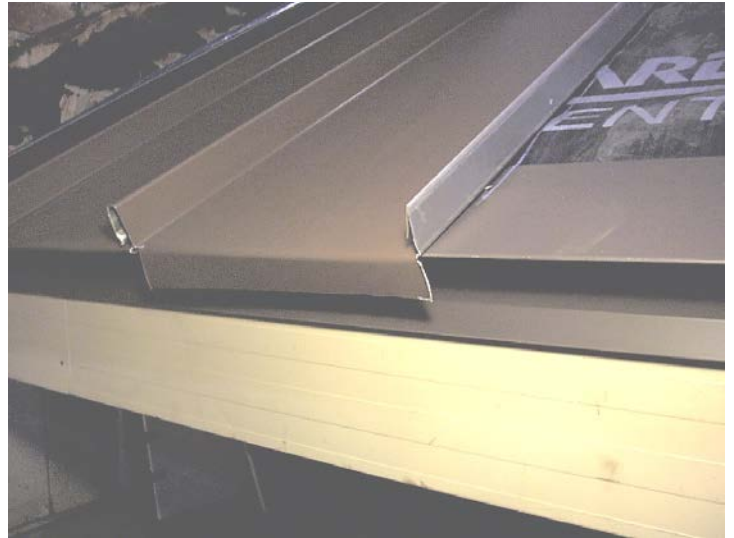
Slide the top section of the new piece over the installed piece, and slide the drip hem into the open drip hem of the installed piece.



Panels

Before fastening the panel into place, a lock must be formed to secure the panel to the starter. At the bottom of panel remove 1¼” from the male lock and female lock.

Note: ClickLock panels are cut to length at the factory. Additional material is required to form the bottom lock.



With a hand flanger fold the lip down and back 180°. Leave a 1/8” to 1/4” gap between the edge of the starter and the back of the field-formed bottom lock of the panel. The gap will allow the panel for expansion and contraction.

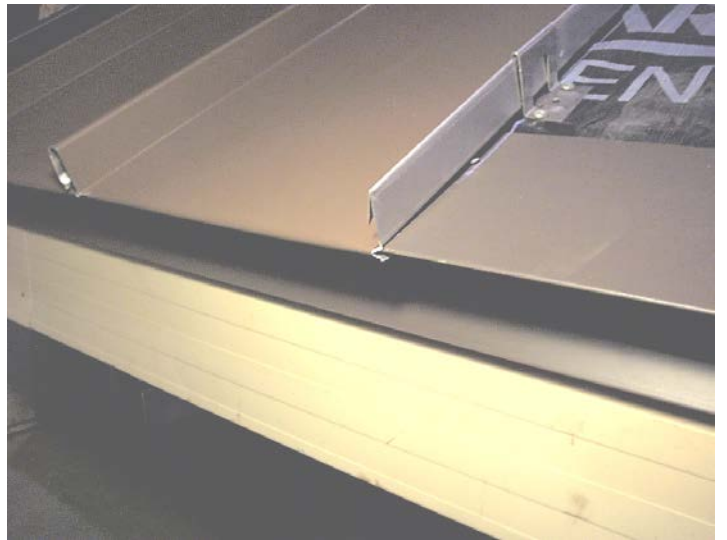


Along the side of the panel, small diamond indicators are stamped into the lock. These indicators are 12” apart and can be used as guides for the installation of anchoring clips.



Panels

Hook the clip over the lock and slide the foot of the clip under panel. Fasten the clip to the deck with two pan head stainless steel screws.



Remove $\frac{1}{4}$ " of the male lock. The lock is removed so it will not extend past the outer lock of the next panel. Once the panels are installed, sealant is applied to the open end of the locks. Removing this $\frac{1}{4}$ ' of lock provides additional space for the sealant to bond inside the lock.

Note: Do not remove this portion of the lock before the bottom lock of the panel is formed. If the locks are cut to unequal lengths, the bottom lock of the panel will bend at an angle, and the panel will not fit over the starter squarely.



Z -Cleats

Z Cleats are installed with a number of accessories. The legs of the Z cleats are 1” long. The position of the cleat depends on the dimensions of the accessories used. Many of the accessories are 4” wide.

With a tape measure, mark the location of the Z cleat.



With a chalk line, snap a line along the length of the panel.



Apply a bead of sealant to the bottom leg of the cleat, and set it in place along this line. From the top, drive screws through the bottom leg of the Z cleat and the panel to temporarily fasten the cleat in place.



Z -Cleats

Turn the panel over and fasten the cleat in place from the backside of the panel with ½” truss head stainless steel sheet metal screws. If the screws were driven from the top down, the points of the screws would damage the underlayment. Once the cleat is secured to the panel, remove the temporary fasteners. To make the assembly watertight, drive screws from the backside of the panel through the holes left by the temporary fasteners.



This Z cleat is installed to accept a 4” flashing. This assembly could be along a sidewall. When installing an assembly similar to this along a gable edge, a gable cleat will be installed along side the panel. This may change the location of the Z cleat.



Gable Edge Trim

A Z cleat and a gable cleat hold the Gable Edge Trim in position. The gable cleat should be installed prior to installing the panels. Hook the drip hem over the drip angle of the gable cleat and hook the hem on the opposite side of the piece over the Z cleat. Be sure the Gable Edge Trim extends past the ridge and the eave. The extra material will be used to form the joint at the ridge and the cap at the bottom of the Gable Edge Trim.

Slide the Gable Edge Trim into position. At the ridge, mark where the panel is trimmed.



At the eave, mark along the starter, panel and Z cleat.

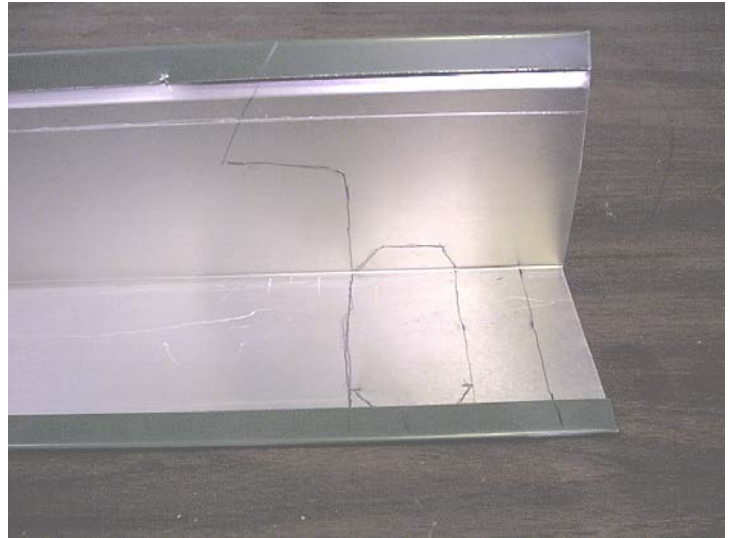


Remove the Gable Edge Trim.

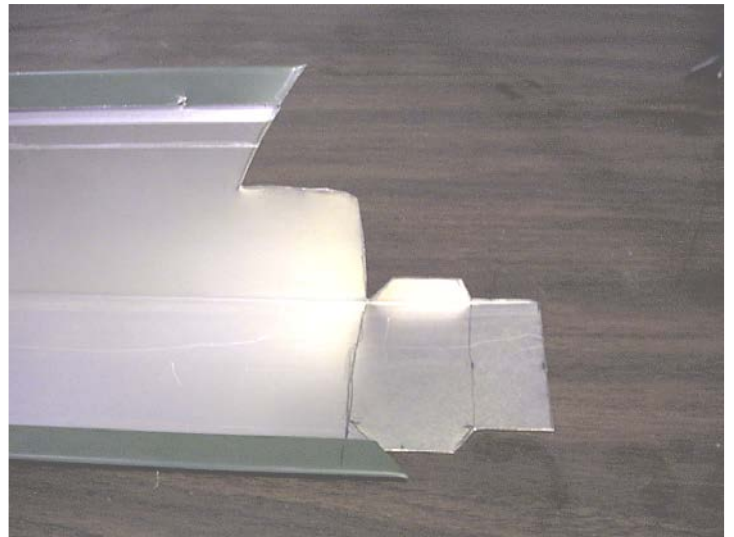


Gable Edge Trim

Sketch a cap with side tabs and a lock onto the end of the Gable Edge Trim.



Remove the excess material.

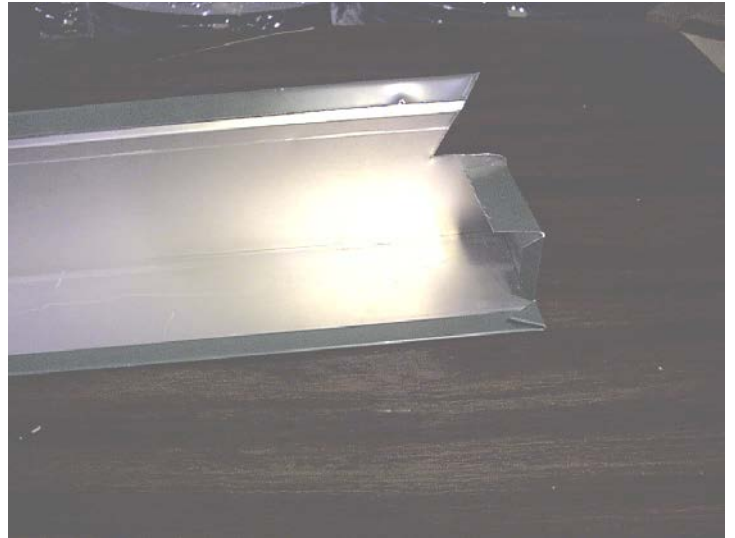


With hand flangers form the cap for the end of the Gable Edge Trim.



Gable Edge Trim

Be sure the cap will cover the end of the flashing and the lock will fit under the starter.



Top view of a field formed Gable Edge Trim Cap.



Once the ends are formed, slide the Gable Edge Trim back into position.



Gable Edge Trim

Side view of the Gable Edge Trim locked in place.



The cap of the Gable Edge Trim completely covers the hole behind the Gable Edge Trim and the lock fits under the starter.



Sidewall

The sidewall assembly is similar to a gable assembly. Fasten the Z cleat from the underside of the panel. Be sure underlayment extends up the wall.

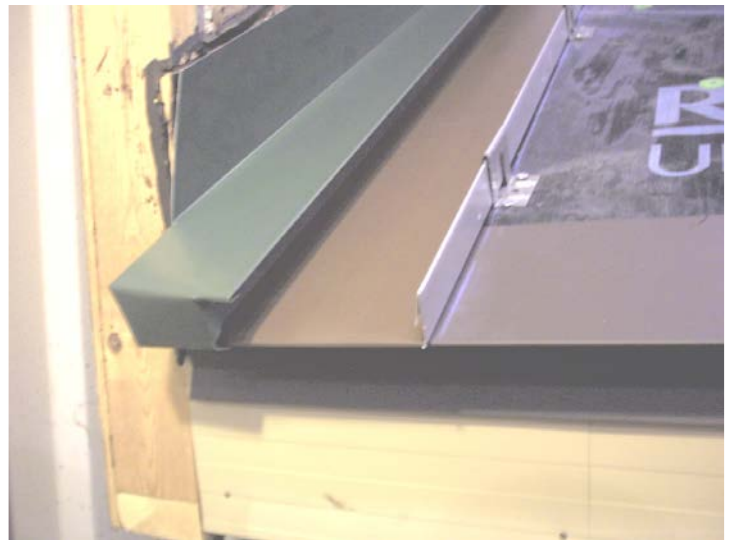


If the sidewall is masonry and a groove is not present, cut a groove into the masonry. If the top portion of the wall flashing is long enough to reach the cut in the wall, fold a lip on the top of the flashing to fit into the groove, and seal the groove.

If the top of the sidewall flashing is not long enough to fit into the masonry cut, form a flashing that will fit into the cut and over the top of the wall flashing. Rivet or screw the top flashing to the wall flashing and seal the masonry joint.

At the bottom of the flashing, if the flashing extends past the wall, the unpainted side of the flashing will be exposed. To cover the unpainted side of the flashing, fold the top of it down 180° to cover the unpainted surface. Trim the flashing for a neat appearance.

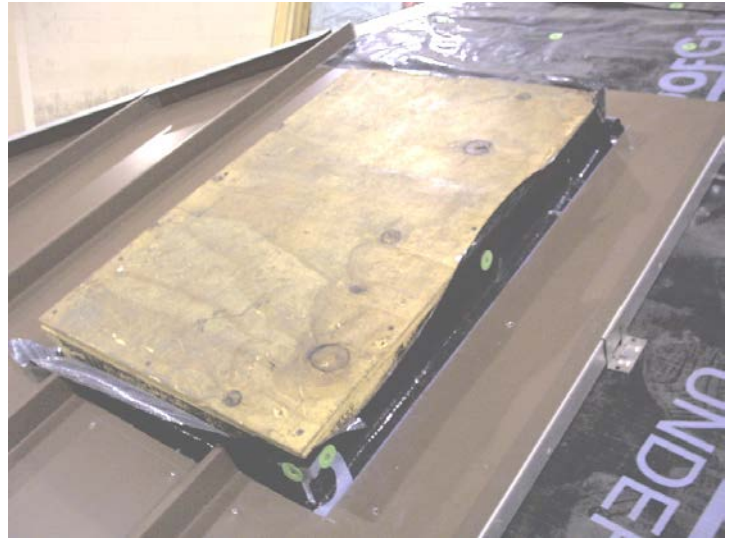
Properly installed wall flashing.



Protrusions

When flashing around roof penetrations, be sure the underlayment extends up the sides of the penetration at least 1½”.

Install the panels around the front and sides of the skylight. Be sure the distance between trimmed panels and the side of the skylight is less than 1”.



Install Z cleats around the front and sides of the skylight. Since the leg of the wall flashing is 4” long, install the cleats so the outside edge of the cleat is 4” from the side of the skylight. Install the cleats so the painted side is exposed. Seal joint between the panel locks and the cleats.



Install the wall flashing on the front of the skylight. Lock the hem of the wall flashing over the edge of the cleat. Mark the flashing where it meets the top of the skylight curb and remove the excess material. Form tabs to bend around the side of the curb. Fasten the flashing to the side of the skylight curb with stainless steel sheet metal screws.



Protrusions

Install the wall flashing along the sides of the skylight. The top of the flashing is trimmed flush with the top of the curb while the bottom of the flashing is trimmed to a 45° angle. Fasten the bottom corners through the wall flashing and Z cleat. Seal the fastener heads.



When the panels are installed along the sides of the skylight, the panels should extend approximately, 12" past the top of the sky light. A field-formed flashing will cover the back of the skylight, so the panel locks behind the skylight should be removed.

Note: In this photo, the underlayment has fallen down. It will be put back in place prior to installing the back flashing.



The field-formed back flashing does a number of things: It covers the back of the skylight curb and the open ends of the Z cleat/wall flashing assembly. It will be the lock for the panels above the skylight and it extends between the locks of the panels. The flashing in this picture was made from 24" coil stock.

With a hand brake, make a fold in the flashing. The fold should be about 6" from the back of the curb and about 1½" deep. The fold will be the lock for the panels installed above it.



Protrusions

Form 1" tabs that bend around the sides of the curb, and form dog ears that cover the open end of the Z cleat/wall flashing assembly. The dog ears will divert water away from the skylight. Seal the joints along the back flashing and side flashing.



When installing panels above the skylight, the female lock of the first panel is lapped over the female lock of the previously installed panel at left.

A lock is formed on the bottom of the panel that engages into back flashing.



Install the remaining panels above the skylight. The male lock of the last panel installed above the skylight will align with the male lock of the panel below.



Protrusions

Prior to installing the pipe flashing, apply VP-275 or roofing cement around the deck and the pipe. Run the underlayment at least 1½” up the side of the pipe and seal around the pipe once more. Cut a hole in the panels. The top of the hole should be straight and be cut to the width of the pipe flashing yet the pipe flashing should cover the sides and bottom of the hole. Apply sealant to the top part of the pipe flashing that will extend under the panels above it, and apply sealant around the hole in the panels. Slide the pipe flashing over the pipe and under the panels above it. Press it in place, and fasten it with stainless steel sheet metal screws. Seal the screw heads. If the seams of the panels must be removed to install the pipe flashing, fill the opening in the locks with sealant.



Chimney flashing is similar to skylight flashing.

- If there is existing flashing and it is in poor condition, it should be removed.
- If there is existing flashing and it is in good condition, leave it in place and install new flashing anyway.
- If there is an existing flashing and it is made of dissimilar metal, cover it with underlayment or roofing cement, so it does not contact the aluminum wall flashing.

Skylights are perpendicular to the roof while chimneys are perpendicular to the ground. Some of angles for the flashings around a chimney will be different than the angles for the flashings around the skylights.



Install panels around the sides and front of the chimney.

Note: The panels in this installation are installed from right to left.



Protrusions

Install Z cleats around the front and sides of the chimney. Be sure the outside edges of the Z cleats are 4" from the side of chimney.



Field-form a back flashing that will cover the back of the chimney and the partial panels along the sides of the chimney. Make a fold in this flashing. This fold will be the lower lock for the panels installed above the chimney. Form dog ears on the sides of the flashing that will divert water away from the chimney.



The back flashing with the upper panels installed.



Protrusions

Allow enough room between the panels and the chimney so there is enough room to lock the panels in place.

When chimneys are over 2' wide install a cricket to help divert the water away from the chimney.



Hook wall flashing over edge of the Z cleats and slide it against the side of the chimney. Install the flashing as described earlier in the skylight flashing section of this manual. Be sure there is roofing cement, VP-275 or underlayment between the masonry, any existing flashing and the new aluminum flashing.

If there is no groove present and the chimney's surface will accept it, make masonry cut in the chimney.

Depending on the location of the groove, additional flashing may be needed to complete the chimney detail.

Seal all the joints and the masonry groove.



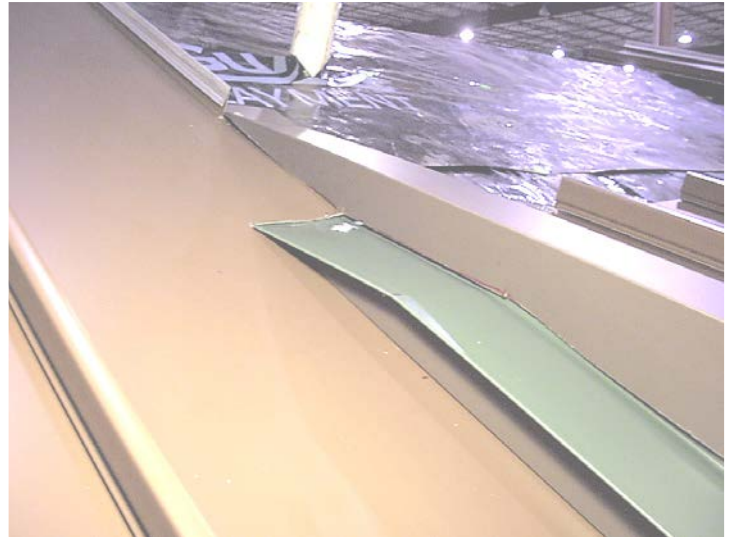
Pitch Change

Install the panels until they meet the pitch change. The panel next to the pitch change may require trimming to fit tight against the sidewall. At the point where the pitch changes, cut a 4" slot in the panel. Remove an angle-shaped piece from the bottom side of the cleat so the top of the cleat is at the same level as the roof next to it. Form the cleat so 4" of the upper end of the cleat will tuck under the slot in the panel. Apply sealant over the cut edge at the upper end of the cleat.

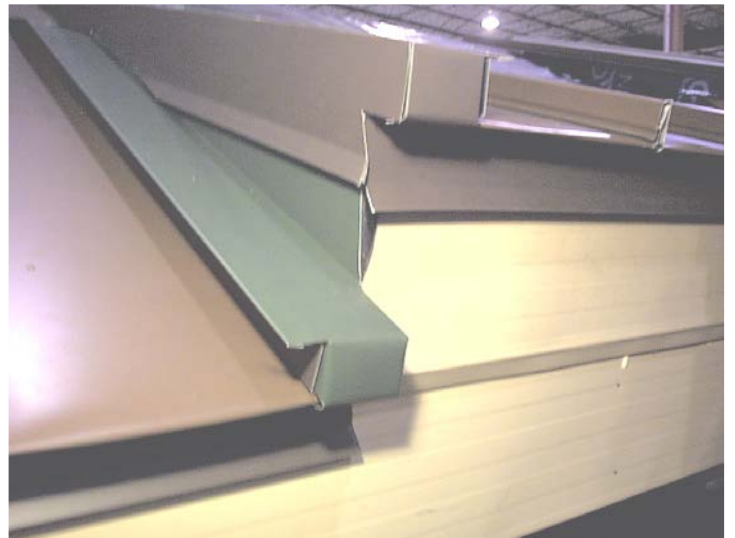


Install wall flashing as described earlier. At the point where the pitch changes, bend the wall flashing to conform to the angle of the Z cleat. Tuck approximately 4" of the wall flashing under the slot in the panel. Trim away the top of the wall flashing extending past the edge of the roof.

Install the panels on the adjoining low slope area. The panels should extend no farther than the point where the pitch changes. Install the Z cleat, gable cleat and Gable Edge Trim. At the top of the Gable Edge Trim, trim the drip face so it conforms to the roof angle.

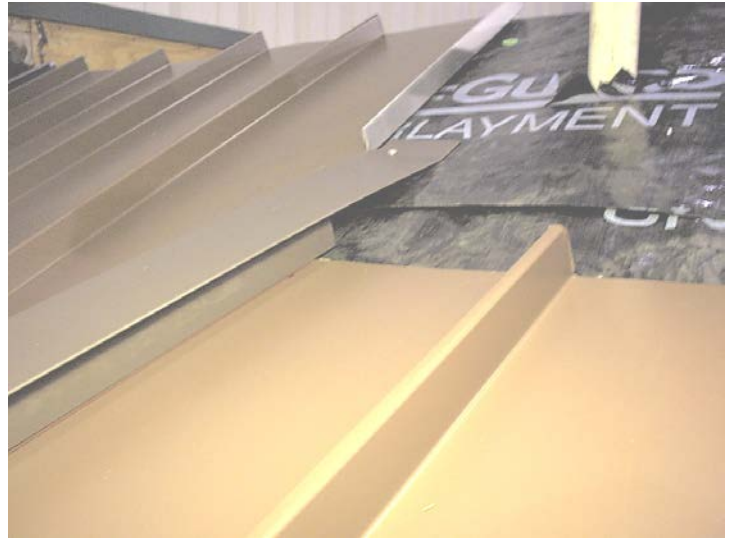


Field-form caps on the ends of the wall flashing and the Gable Edge Trim.

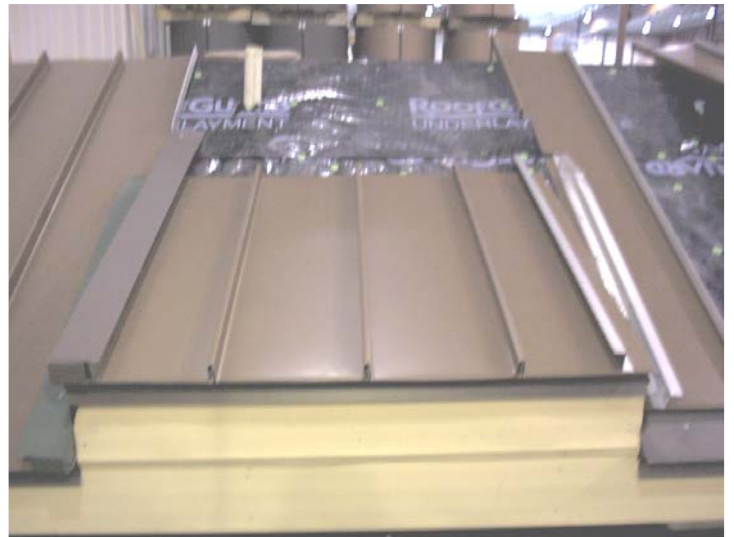


Pitch Change

There will be a small empty space behind the panels.

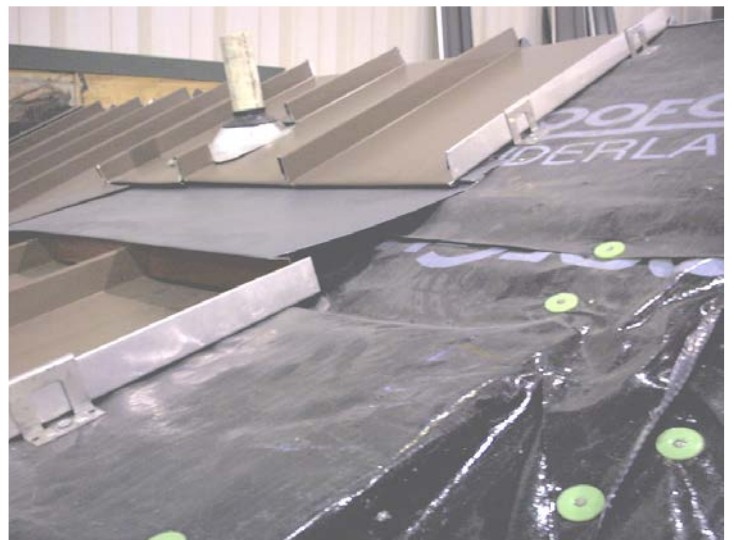


Install the accessories on the opposite side of the low slope area in the same manner as the accessories were installed on the first side.



Install Z cleats between the locks at the top of the panels. Apply sealant to the joint of the Z cleats and the seams. A field-formed flashing is used to make the transition between the low slope and steep slope roof sections. The flashing will run parallel with the lower roof until it reaches the upper roof. When it reaches the upper roof section, it will conform to the angle of the steep roof section. At this point, make a fold in the flashing. The fold will be the starter lock for the upper panels.

Note: In this picture, some of the panels were removed and the flashing was cut away to show this detail.

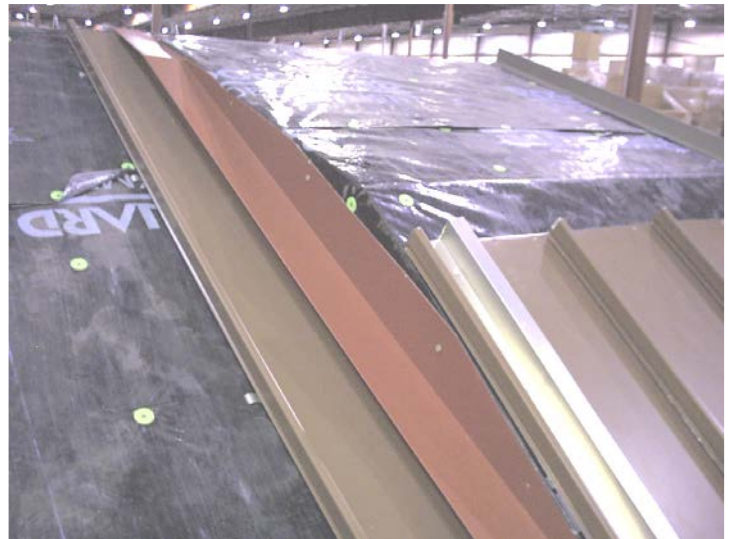


Pitch Change

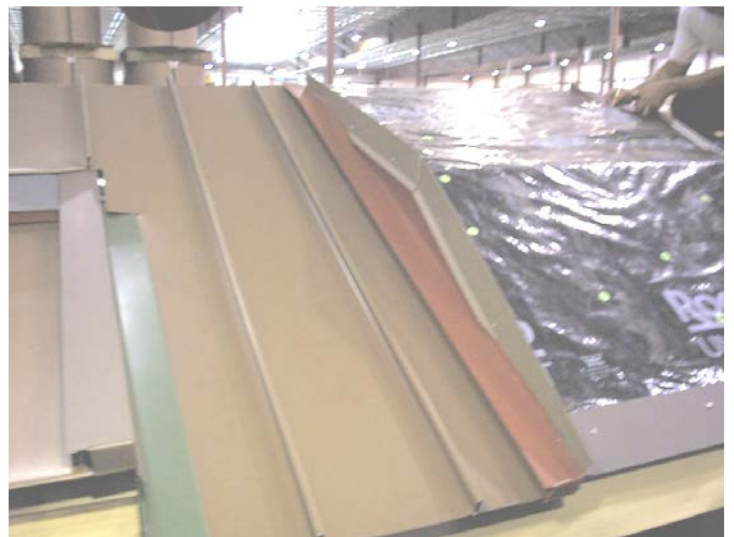
Properly installed low to high pitch change flashing.



Sidewall flashing must be installed on both sides of the roof section. Install Z cleat as described earlier. At the top of the panel, the Z cleat will taper so the top of the cleat will run even with the roof plane. The Z cleat should end at the ridge. Apply sealant to cover the cuts made at the top end of the Z cleat. Install the wall flashing. At the top, the wall flashing should taper to conform to the angle of the Z cleat. Fasten the wall flashing to the wall with stainless steel sheet metal screws. If possible, the fasteners should be high enough so the gable cleat will cover them. Remove the top portion of the sidewall that extends past the roof planes. Note: The panels to the left of the panel shown have been removed.



Install the gable cleats. Trim the ends of the gable cleat where they meet the wall flashing.



Pitch Change

Install the panels on the lower roof section. When installing the panels, be sure the seams of the panels are lower than the roof plane of the top section of roof. Otherwise, the seams will interfere with the transition flashing. Install the Z cleat along the gable and between panel seams. Seal the joints between the Z cleats and the panel locks.



Field-form a transition flashing. It will be used to make the change between the high and low slope roof sections.

Make a hem that will lock over the ends of the Z cleats. At the top of the flashing where it rests on solid decking, make a fold. The fold should be about 1½” deep. The fold will be the starter lock for the panels on the upper roof section. Make notches on the sides of the transition flashing where it meets the gables’ Z cleats. The notches allow for the installation of the Gable Edge Trim.



Before installing the Gable Edge Trim, its top must be modified to fit into the transition flashing, and its bottom must be trimmed to fit above the wall flashing.

Remember to form a cap as described earlier to cover the open area at the bottom of the Gable Edge Trim.

Follow the same procedure to install the gable assembly on the opposite side of the roof section.



Pitch Change

Install the first panel and the Z cleat for the gable trim. The field-formed bottom lock of the panel will fit into the fold in the transition flashing and cover the end of the Gable Edge Trim on the lower roof section.



Form the Gable Edge Trim for the upper roof section. Remove some of the drip hem and drip face from the top end of the part and form a cap at the bottom of the part. The Gable Edge Trim should terminate at the ridge.

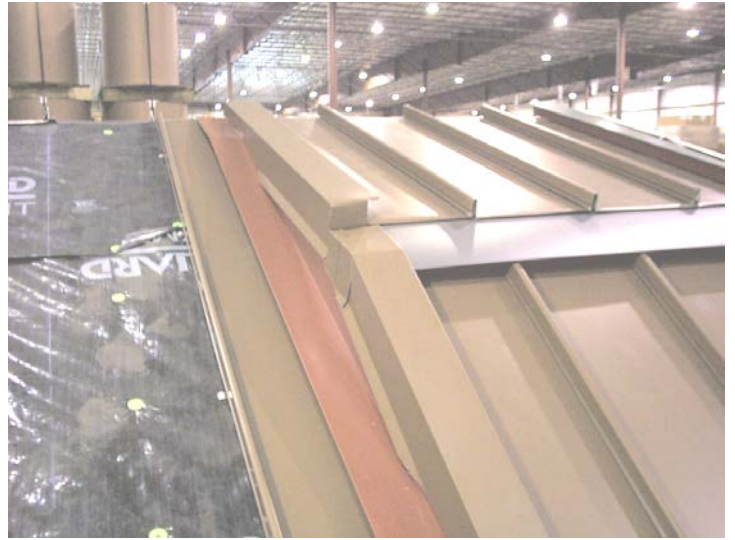


Transition detail.



Pitch Change

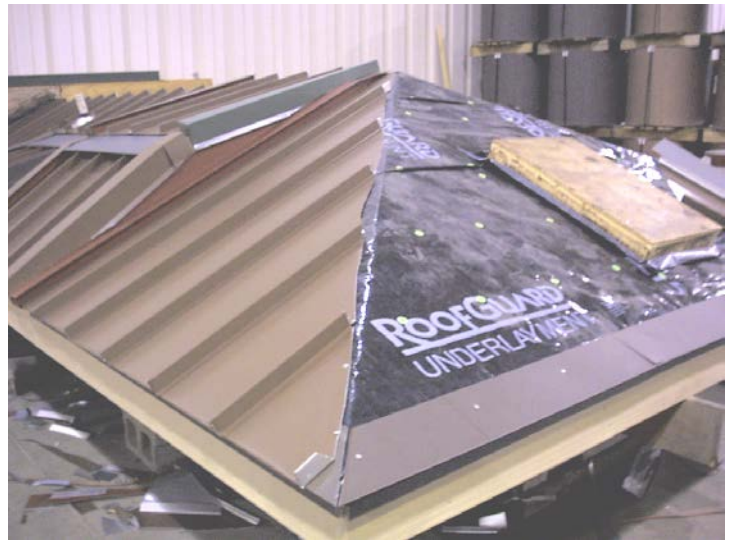
Install the remaining panels across the upper roof section, and install the gable assembly on the opposite side of the roof section.



Hip and Ridge

When installing standing seam panels, the roof looks best when panel locks align on both sides of the hip line. This is not always possible and it won't affect the performance of system. On the roof pictured at right, the width of first panel next to the dormer section can be reduced so the locks at the hip line can match the layout of the panel locks on the opposite side of the hip line.

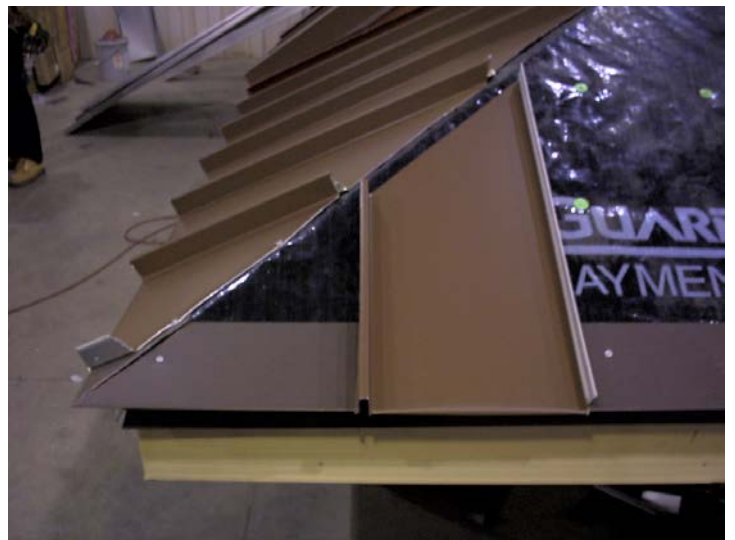
When cutting the angled end of the panels, be sure the edge of the cut is as close to the hip line as possible.



So the panel seams on the unfinished roof section align with the locks on the opposite side of the hip, make reference lines on down to the starter. Install the panels next to these reference lines. The first panel in this section will be a partial panel.

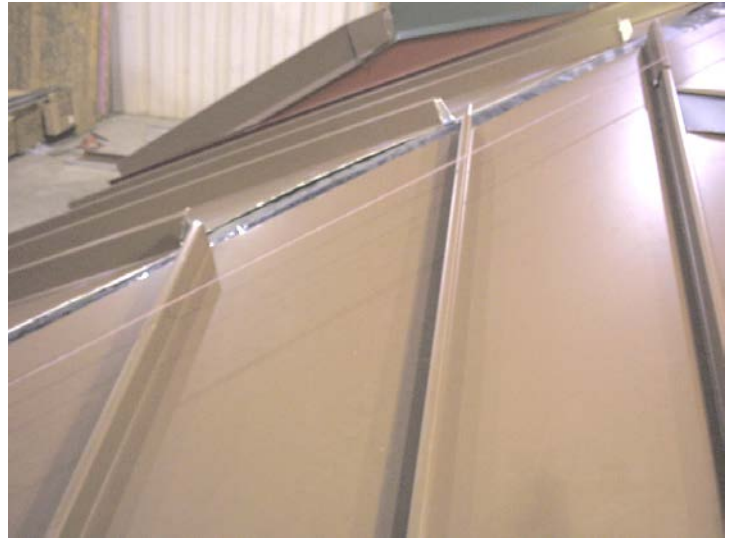


This panel was cut and temporarily set in position along the reference line. Since it is difficult to square small panels, this panel will ensure the panels to its left are square. To determine the width of the first panel, work right to left until the width of the first panel is determined.

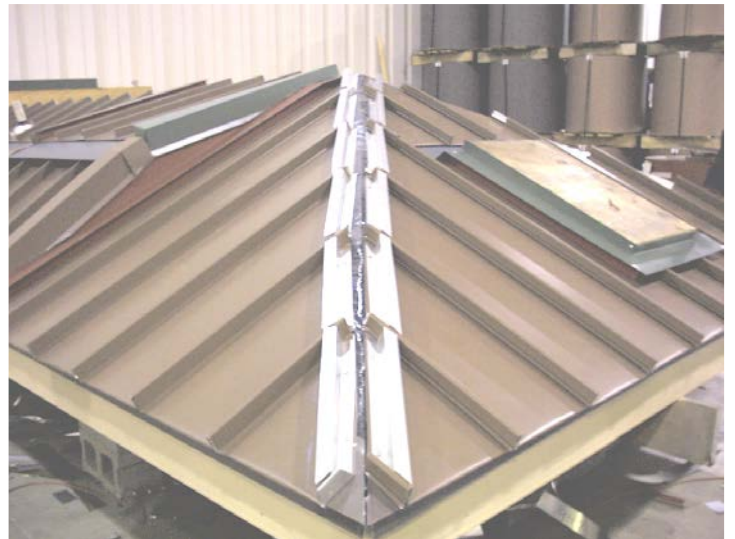


Hip and Ridge

Once the panels on both sides of the hip are installed, the Z cleats can then be installed. On both sides of the hip, measure approximately 2" from the center of the hip line. With a chalk line, mark all the panel locks. This will mark the outside edge of the Z cleats.

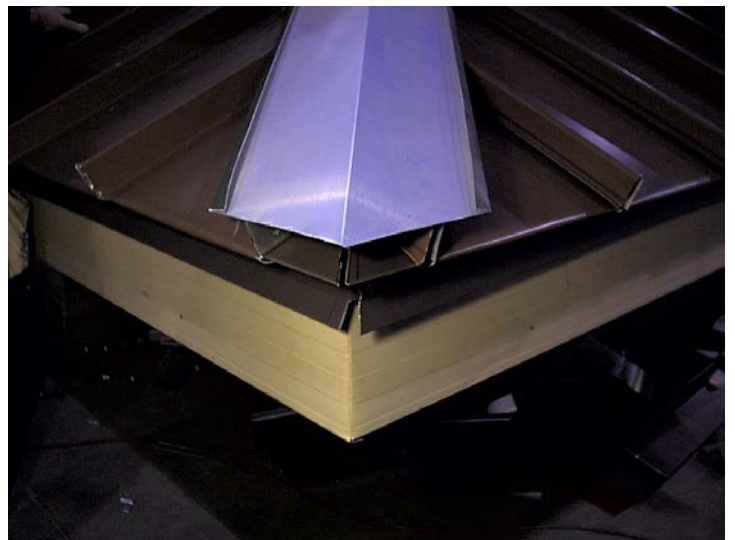


Cut Z cleats so they fit tightly between the panel locks. Fasten them in place with stainless steel screws. Seal the joints between the panel lock and the cleats.



Note: The fasteners in the Z cleats will prevent the panels from sliding off of the roof.

Set the Hip Cleat in position. Trim the bottom of the cleat so it conforms to the corner of the roof.

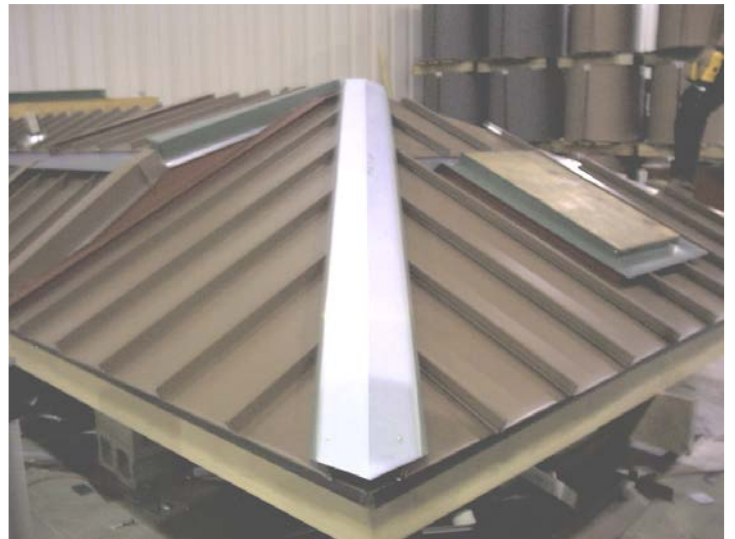


Hip and Ridge

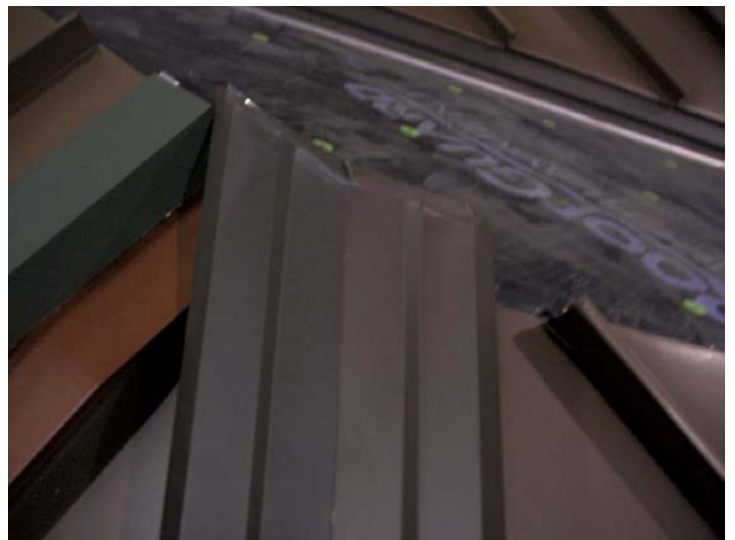
Form the top of the Hip Cleat so approximately 2" of material extends past the ridge and hip lines. Bend this metal down to the angle of the roof. Another Hip Cleat and a Ridge Cleat will lap over this piece.



Center the Hip Cleat over the hip line and fasten it in place with stainless steel sheet metal screws.



Form the ends of the hip cover to match the ends of the hip cleat.



Hip and Ridge

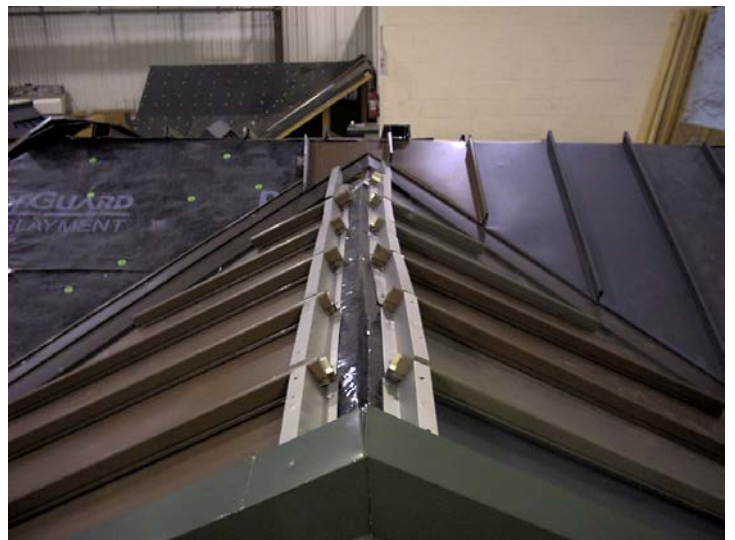
Hook the lock of one side of the Hip Cover over the edge of the Hip Cleat. Press down on the Hip Cover to push the lock of Hip Cover past the edge of the Hip Cleat. Snap the lock in place. Be sure the lock is engaged the entire length of the hip cover.



Make a cap for the bottom end of the hip assembly. The cap gives the end a finished look and prevents birds and insects from making nests in the roof. Hold a piece of flat stock against the opening and trace the perimeter with a pencil. Make an outside line $\frac{1}{2}$ " from the inside line. This additional material is for tabs that will slide inside the trim assembly. Trim the cap along the outside line, and make V cuts to the points where the lines change direction. With a hand flanger, fold the tabs down 90° . Slide cap in place and fasten with sheet metal screws.



Install Z cleats at the ridge the same manner they are installed at a hip. When installing a vented ridge base, position the Z cleats so they do not cover the perforations in the vented base.



Hip and Ridge

When a Z cleat covers a valley, trim the cleat so it conforms to the irregularities of the valley.



Set the vented ridge base in position. Trim the end of the base to match the angle of the valley.



Before fastening the base in place, apply a bead of sealant across the top of the Z cleats. The sealant will prevent water from passing between the Z cleats and the vented ridge base.

When more than one piece of base is needed to cover the ridge, the ends of the base can be butted together.



Hip and Ridge

Set the ridge cover over the base and trim its end to match the angle of the valley. In the picture to the right, the ridge cover had to be notched to fit around a seam lock.



Hook one side of the ridge cover over the lock of the ridge base, and push the opposite side of the cover down over the base until it locks in place.

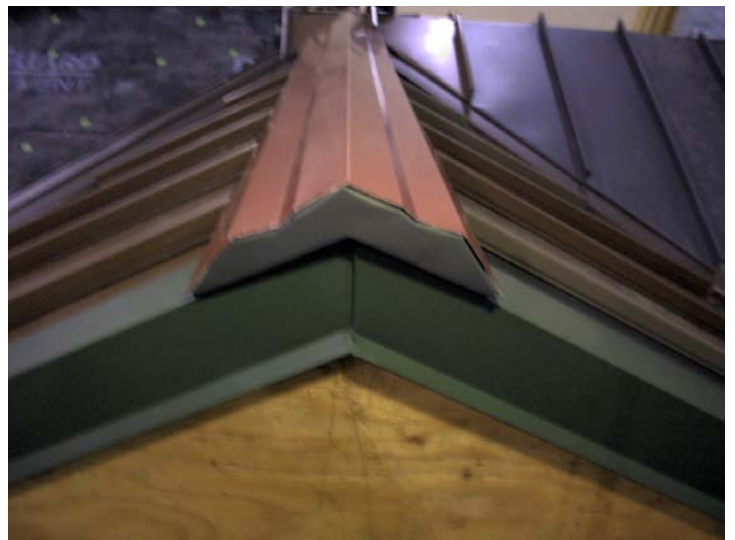
When lapping the ridge cap, remove 4" from the locks of the cap where it locks around the base. Apply sealant to this 4" area, and set the next piece of ridge cover in place.

When a vented base is used, be sure the cover does not rest on the baffles and restrict the air flow.

The ridge cover and ridge base are custom made to the pitch of the roof. Provide the factory with the roof pitch when ordering these parts



Form an end cap to cover the open end of the ridge assembly. This detail is described earlier in this section.



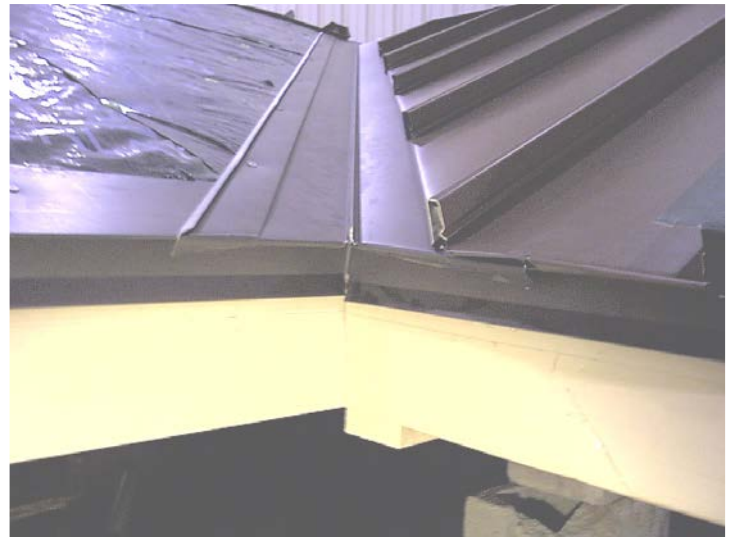
Valley

Snap a chalk line down the center of the valley. Set the valley flashing in position. Be sure the valley's return flanges extend at least 1¼" past the edge of the starter. Mark the underside of the valley where it meets the starter. Trim the valley 1¼" past the mark. At the mark, use hand flangers and bend this extra material back 180° to form locks for the bottom of the valley. Set the valley back in position and push it in place so the locks wrap the end of the starter.

Lap valley flashing at least 4". Open the water return flanges of the installed valley. Apply sealant to the lapped area. Press the upper section of the valley into the installed valley, and bend the water return flanges back in position.



When installing the panels over valley, do not block the end of the valley's water return channels. Remove the field-formed locks of the panels that would otherwise restrict the flow of water from draining out of the valley's water return channel.



When installing the valley flashing over the ridge, allow for extra material to extend past the ridge. Fold the extra metal flat against roof deck.



Valley

Install the valley on the opposite side of the ridge. Allow 2" to 3" of material to extend past the ridge line. Trim and fold the valley so it fits neatly into the installed valley. Before fastening the valley in place, apply a bead of sealant where the valleys overlap.



Seal the lap joints



Panels into a Valley

Use a square to determine the angle to cut the panels that install in the valley. Transpose this angle to the back of the panel. Be careful not to transpose the angle in the wrong direction. Allow for an additional 1/4" on the end of the panel to form to form a lock that will fit into the valley's locking hem.



Remove the material from the end of the panel.



Remove 1/4" of the panel's locks.



Panels into a Valley

Insert the angled end of the panel into a hand flanger.



Fold the metal back 180° to form the bottom lock.



The lock on the bottom of the panel may need to be trimmed so it doesn't interfere with the panel's side locks.



Panels into a Valley

Lock the panel into the lock of the previously installed panel.



Slide the panel in place until it engages into the valley's locking hem. Remove some of the panel's male lock so the male lock does not extend past the next panel's female lock.



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