VersaFrame Inc.
METAL SIDING • METAL ROOFING • METAL BUILDINGS
2806 - 5th Street, Nisku, Alberta T9E 0H1
(780) 979-0325 / 1-877-463-8256

Exposed Fastener Panel and Trim Installation Guide

This manual will assist you with the application of metal roofing and siding products purchased from Versaframe Inc. It cannot possibly answer all installation questions as every project differs, but it will provide the basics of installing metal roofing and siding sheets in most common applications. Versaframe (the manufacturer) also provides a knowledgeable and well trained support staff to assist with any install questions our customers have.

Step 1) RECEIVING MATERIAL

Review the material list to ensure you are familiar with the pieces that arrive

It is the responsibility of the installer to unload material from the delivery truck

The installer shall be responsible for providing suitable equipment to unload delivered material

After receiving material, check the condition of the material, and review the shipment against the shipping list to ensure all materials are accounted for. If damages or shortages are discovered, it should be noted on the Bill of Lading at the time of delivery. A claim should be made against the carrier as soon as possible. Versaframe is not responsible for any damages or shortages unless they are documented in writing and presented to Versaframe Inc. within 48 hours.

Step 2a) HANDLING MATERIAL

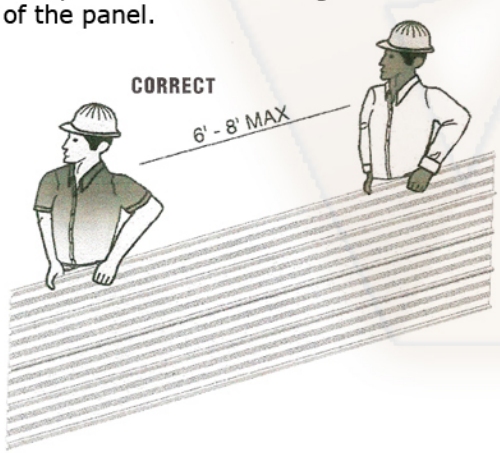
Handle bundles and individual panels with care to avoid damage

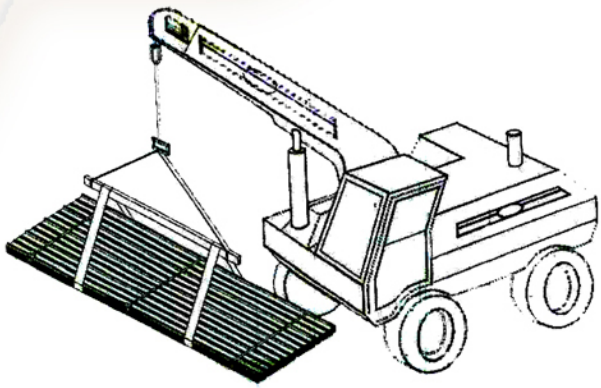
Wear clean, non-marking, soft-soled shoes when walking on the panel to avoid damage to the finish. When walking on the roof panels is unavoidable, walk only in the flats of the panel. Walking on the ribs can cause damage to the panels.

When handling painted steel, care should be taken to prevent scratching of material. Clean gloves should be worn at all times to prevent material damage and injury.

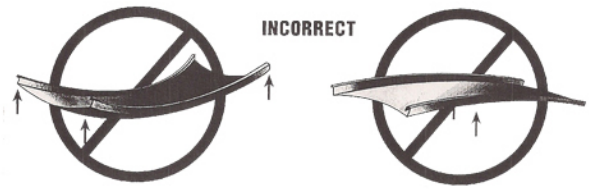
Handling of individual panels should be done carefully and properly to avoid bending and damaging. Panels should be carried by grasping the edge of the panel to buckle or bend in the centre.

Normally, individual panels can be handled by people placed every 6'- 0" to 8'- 0" along the length of the panel.





Using Cranes - A crane should be used when lifting panels with lengths greater than 20'-0". Please be sure to utilize a spreader bar to ensure the even distribution of the weight to the pick-up points. As a rule when lifting panels, no more than 1/3 of the length of the panel should be left unsupported. Never use wire rope because this will damage panels.



CAUTION

Improper loading and unloading of bundles and crates may result in bodily harm and/or material damage. VersaFrame is not responsible for bodily injuries and/or material damages resulting from improper loading and unloading.

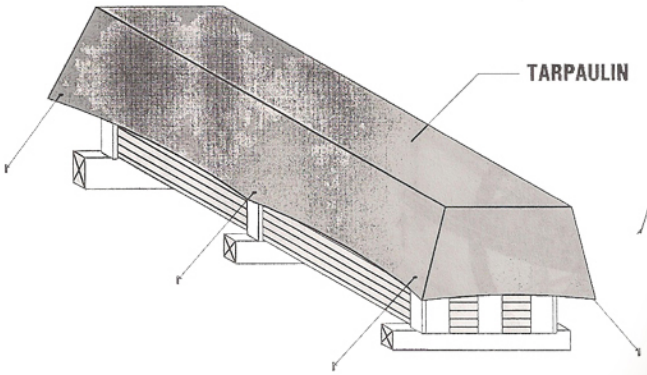
Step 2b) STORAGE OF MATERIALS

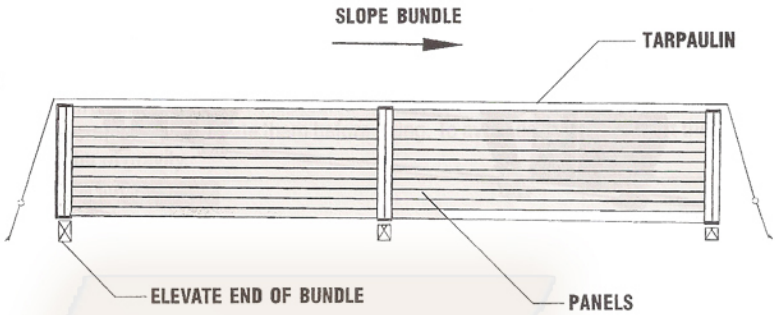
Store panels and other material in a dry, well ventilated area away from traffic.

Storing panels in a wet condition can cause deterioration of the panels

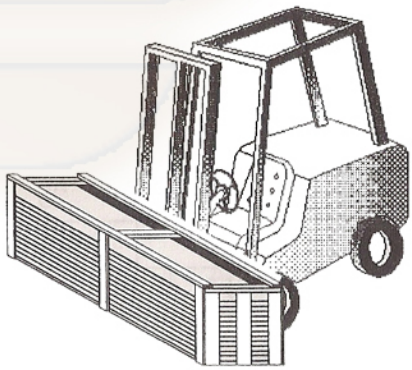
If moisture has formed, the panels should be unbundled, wiped dry and allowed to dry completely.

Bundled sheets should be stored high enough off of the ground to allow for air circulation and prevent contact with accumulating water. Elevate one end of the bundle to allow any moisture to run off the panels. Versaframe recommends covering the bundles with a tarpaulin. Do not use tight fitting plastic-type tarpaulins as panel bundles covers. While they may provide protection from heavy downpours, they can also retard necessary ventilation and trap heat and moisture that may accelerate metal corrosion. If panels are to be stored in possible bad weather, we suggest they be stored inside. Extended storage of panels in a bundle is not recommended. **Under no circumstances should the sheets be stored near or come in contact with salt water, corrosive chemicals, ash, or fumes generated or released inside the building or nearby plants, foundries, planting works, kilns, fertilizer, and wet or green lumber.**





Using Forklifts - A forklift may be used up to 20'-0" long. Please make sure the forks are at their maximum separation. Do not transport open bundles. When transporting bundles across rough terrain, or over a longer distance, some means of supportig the anel load must be used.



Step 3) TOOLS REQUIRED

Before starting have the following tools available and in good working condition:

- Screw Gun- ¼" and 5/16" Hex Head socket
- Snips- three pair required for left edge, right edge, and centreline cuts
- Chalk Line
- Caulking gun and caulking
- Marking pencils or scratching tool
- Utility knife for Misc. cutting
- String line for general alignment and measuring
- Tape measure (minimum 25')
- Vice grip pliers, both standard and duckbill type
- Hammer
- Safety gloves
- Ear plugs
- Pop rivet gun

Optional Tools:

- Electric shears for metal cutting
- Electric drill to drill holes when necessary c/w bits

Cutting - Steel roofing and trim should be cut with nibblers, tin snips or a profile shear. Although VersaFrame Inc. does not advocate the use of a saw, the reality is many people use a power saw in some manner. There are two concerns when using a saw:

First, be sure that no burns are left on the ends of the panel. The rough edges are not protected and will rust.

Second, the fillings coming off the blade are hot and will adhere to surface of the panels and theses will rust. Be sure all filings are removed from the surface as they will rust and pit the surface of the sheet.

Step 4) Roof Preparation

Versaframe panels are designed to be installed over open framing, and/or directly over a wood substrate (Minimum 5/8") with a minimum 15lb felt.

For your roof to provide years of service prevent wood decay and simplify the task of application, the roof must be properly prepared. If your Job is a re-roof with irregular surface or has any type of debris, it needs to be cleared off before you start the job. The underlayment should be checked at this time, and any decayed lumber must be replaced. The foundation of your roof should be sound.

When installed, panel distortion may occur if not applied over properly aligned and uniform substructure.

Galvanized and galvalume panels should not be in contact with, or subject to, water runoff from copper, lead or uncoated steel materials.

Condensate water from air conditioning units typically contains dissolved copper. This condensate should be discharged through a plastic pipe extended beyond the edge of the roof.

Always check with local building codes prior to all installation for any additional requirements that may be specific to your area.

WORK SMART. WORK SAFE.

Note: Safety Considerations

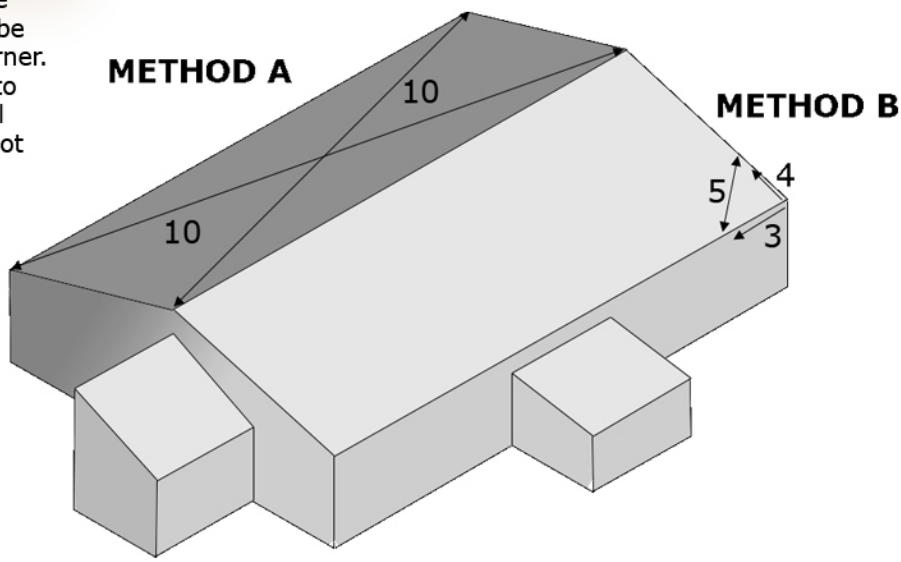
- **Never use unsecured or partially installed panels as a working platform.**
- **Metal roofing panels are slippery when wet, dusty, frosty, or oily.**
- **Do not walk on the panel seams.**
- **Always be aware of your position on the roof.**
- **Wear proper clothing in order to minimize the potential for cuts, abrasions, and other injuries.**
- **Use care when operating electrical and power equipment.**
- **Roof installation on windy or stormy days can be dangerous.**
- **Always have at least two people working in case someone needs to call for help.**

Use Fall Protection Equipment

When installing over new or existing roofs, the installer should check the roof deck for squareness before installing panels. Several methods can be used to verify squareness of the structure for proper installation of the panels.

METHOD 'A': One method for checking the roof for squareness is to measure diagonally across one slope of the roof from similar points at the ridge and eave and obtain the same dimension.

METHOD 'B': The 3-4-5 triangle system may also be used. To use this system, measure a point from the corner along the edge of the roof at a module of three (3). Measure a point from the same corner along another edge at a module of four (4). By measuring diagonally between the two points established, the dimension should be exactly a module five (5) to have a square corner. Multiple uses of this system may be required to determine building squareness. If the end wall cannot be made square, the roof system cannot be installed as shown in these instructions.



Step 5) Installing Curbs and Flashings

Installation of eave and valley flashings, roof to wall connections, splash plates, or curbing is required prior to panel installation. Make sure that caulking and sealing is properly completed.

Step 6) Installing Roof Panels

Our roofing panels require a certain degree of slope to ensure proper water drainage.

12-36 panels requires a minimum pitch of 1:12

9-36 panel requires a minimum pitch of 3:12

As a general principle the less steep the roof, the more necessary the use of ridge closures, and the more necessary also that butyl sealant be used at all side-lap to prevent water from siphoning over the ribs.

Panel installation should begin at the gable end of the roof opposite the prevailing rain-bearing wind (this will provide added assurance against wind driven rain being forced under the laps).

Measure 1 full panel width in (approx. 38") from the roof edge. At this point chalk a line from ridge to eave (avoid getting chalk on panels - it may discolour panels). Place the leading edge of the first panel along this line. It is extremely important that this panel be laid square to the eave and ridge so that the remaining panels will line up square on the roof frame.

Lay down the second and third panels, checking the alignment, and making sure they are square. This will ensure that a sawtooth effect at the eaves and ridge is avoided.

It is wise it have a person at the eave and at the ridge to ensure that the proper panel coverage is being maintained across the roof. Also be sure that the panels are properly side lapped.

Panel Lap Detail

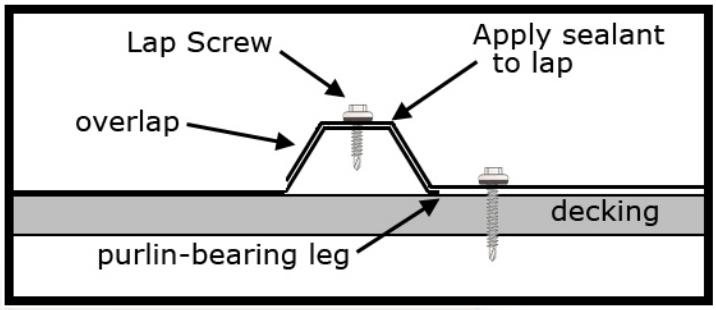


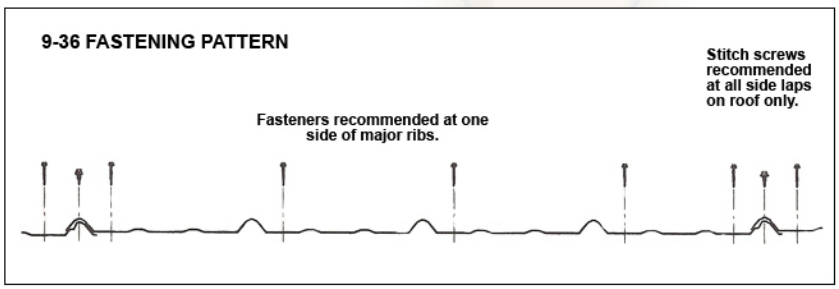
Figure 6 On low-pitched roofs, lap screws and butyl tape or caulk should be applied at the panel lap to keep water from overflowing the lap. Note that the *underlap* side of the panel has a distinct purlin-bearing leg that rests on the roof decking.

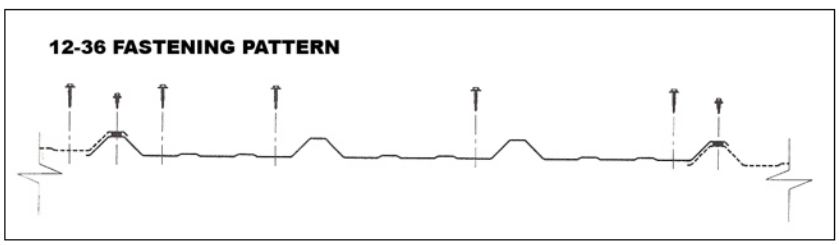
Lapping panels – in applications where end – lapping is necessary, the upper panel on the slope should lap over the panel that is lower on the slope. Lower roof pitch requires a greater amount of panel overlap. All end-lap applications require 2 horizontal rows (across the panel) of butyl sealant tape and proper fastening to provide maximum water seal.

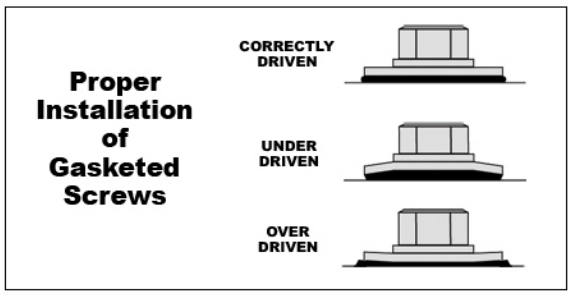
An overhang of 2" is recommended to provide a drip edge, while only 1" overhang is necessary where gutters are used. The open panel ribs at the eave can be sealed with inside closures. For maximum weather-tightness, a row of butyl tape can be applied above and below inside closures.

Fastening Patterns

Versaframe has provided the proper length fastener, but only proper tightening and location will insure a leak-resistant roof. Follow these fastening patterns recommended by VersaFrame.







Remember, on this application:

1) Always use screws. Nails will back out.
2) Use the proper screw gun, not a drill with a socket.

Trimming and Cutting Steel Panels

Inquire with VersaFrame for the best tool available for cutting steel panels both across the profile or the length of the panels. The Versaframe heavy-duty turboshear is capable or cutting up to 18 gauge steel. The turboshear also makes angle crosscuts through profiled siding panels. The time saving turboshear inserts directly into the chuck of a standard A/C or cordless drill, it's that easy to convert your power drill to a power shear.

Saw blades have a tendency to generate metal slivers or metal chips particular that can burn paint surface or leave rust marks on the panels and trim. The same is true of any fillings left on the roof caused by the application of screws. Care should be taken to brush all such particles from roof surfaces after installation.

When Cutting metal panels and flashings, goggles must be worn for eye protection.

CAUTION

All product services should be free of debris at all times. Installed surfaces should be wiped clean at the end of each work period. Never cut panels over metal surfaces. Metal shavings will rust on the surface, voiding the warranty.

Step 7) Installing Trim and Flashings

Properly trimmed installations not only enhance the attractiveness of your roof, but are critical in the protection of your roof as well. Butyl tape and closure strips should be applied to ensure against water penetration.

7a) Install Eave Trim

In this step install the eave trim before panel installation can be begin.

Lay roofing underlayment over Eave trim so that the water that may formed due to condensation does not collect underneath the drip edge.

Valley flashings are installed over the underlayment.

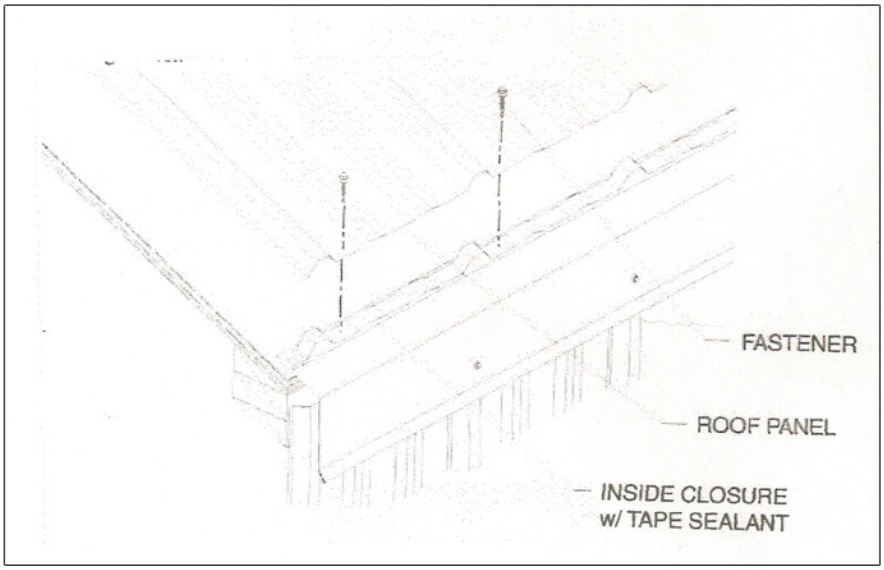
Panels can then be installed from either left to right looking from eave to peak.

Installing Inside Closures

- Apply a row of tape sealant across the top leg of the eave moulding along the width of the building.
- Align and place inside closures over the tape sealant. It is critical that inside closures are square to building as this will control the alignment of the panels.
- Apply a row of tape sealant across the top of the inside closure (not shown for clarity).

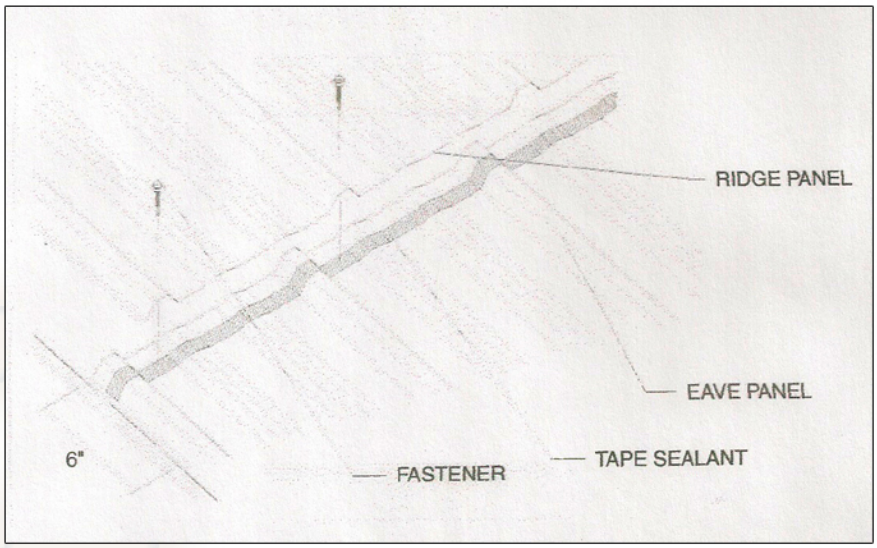
7b) Install First Panel

- Install the first panel over inside closure to allow for desired overhang. Make sure the panel is square to the eave and rake.
- Fasten through panel, closure, and sealants into decking with appropriate amount of fasteners. (see fastening patterns on page 3)
- Fasteners must penetrate closure and sealant.
- After securing panel at eave, repeat the fastening pattern at the appropriate spacing to meet local building codes.



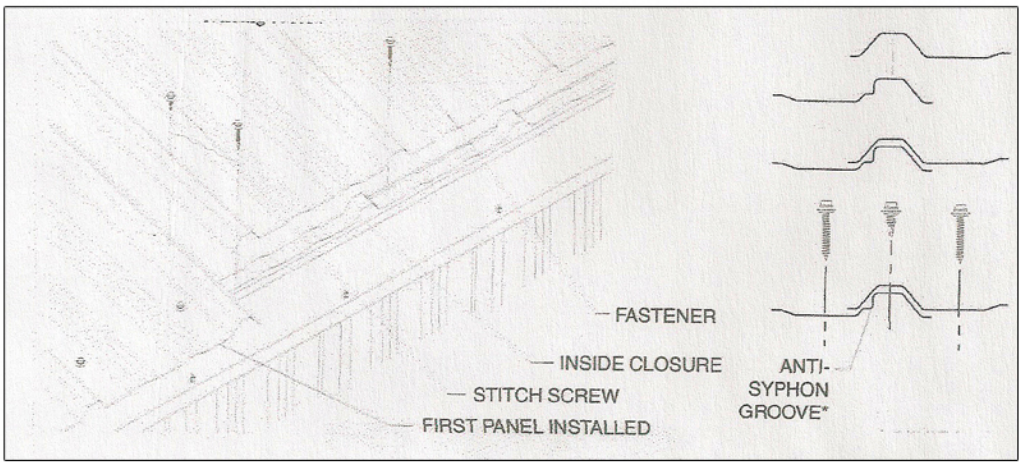
7c) Install Second Panel (if applicable)

- Apply a row of tape sealant across and over the ribs of the first panel about 3" from panel end.
- Install the second panel over the first panel and tape sealant with a 6" endlap. Fasten through both panels and tape sealant into support with appropriate amount of fasteners to meet local building code. (see fastening patterns on page 4). Fasteners must penetrate closure and sealant.
- After securing panel at eave, repeat the fastening pattern at the appropriate spacing to meet local building codes.



7d) Install Second Panel at Eave

- Place the lapping seam of the second panel on top of previously installed panel so that panels ends are flush at eave. (see below)
- Fasten through panel, closure, and tape sealant into support with appropriate amount of fasteners to meet local building code. (see fastening patterns on pages 4). Fasteners must penetrate closure and sealant.
- After securing panel at eave, repeat the fastening pattern at the appropriate spacing to meet local building codes.



7e) Install Ridge Cap

- The ridge cap is used to seal the upper point at which two slopes meet. This can be both along the ridge of the roof as well as the covering for a hip. Either woodgrip or self-drilling lap TEK screws are applied through the ribs of the metal.
- Debris, insects, and blowing rain can find easy access under the ridge cap, so closures are often used to either completely or partially seal the opening. Closures under ridge caps come in 2 types:

  Solid Closures ("outside closures") are as long as the width of the panels. They lock together in a row placed directly under the screws that attach the ridge cap, and form a solid, watertight, airtight barrier. (see Figure 8)

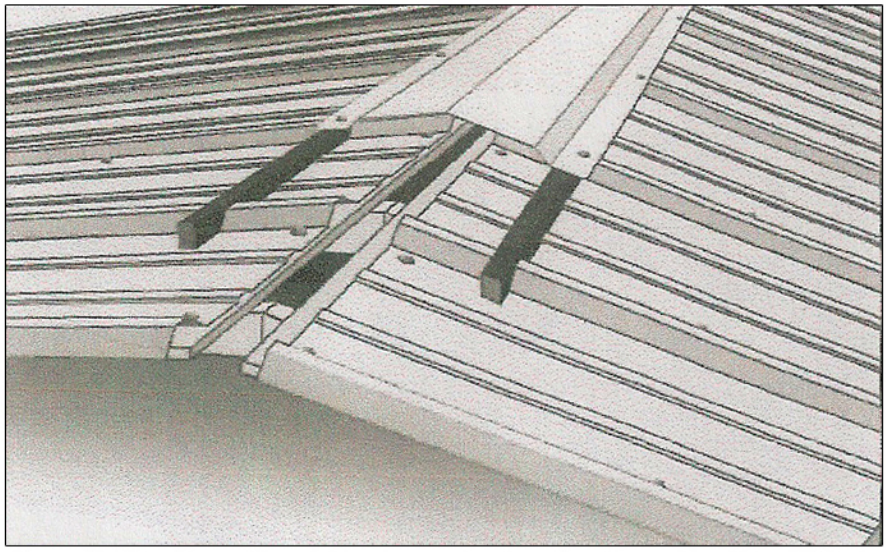
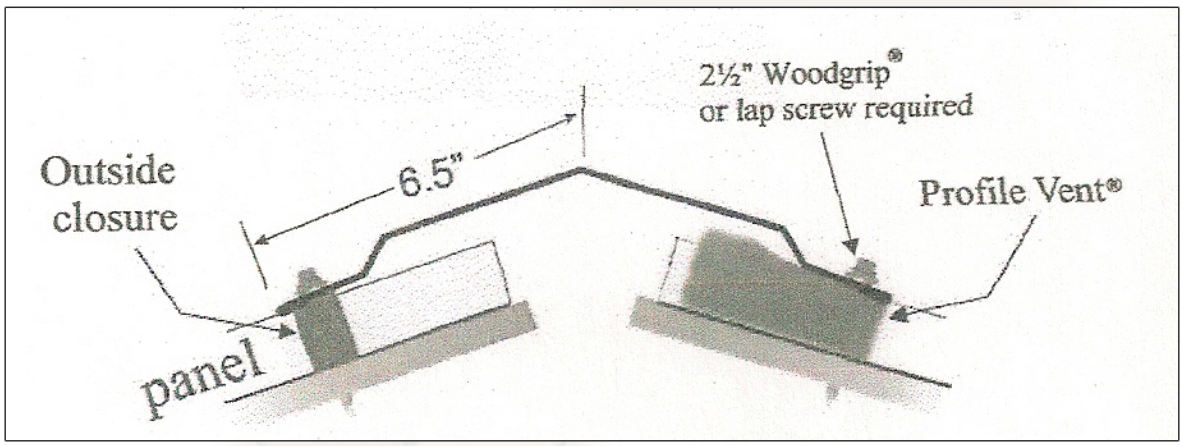


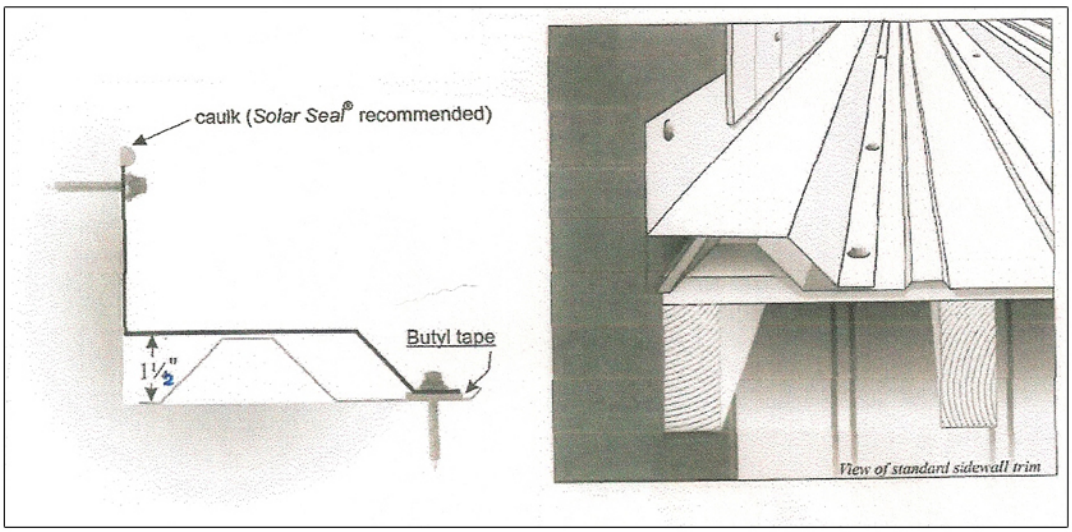
Figure 8 Ridge Cap with outside closures in place. Panels require either 7/8 inch lap or two 1/2 inch Woodgrip screws for attaching the ridge cap.

Profile Vent comes in 25-foot rolls, is 3 inches wide, and forms a water-retardant, insect resistant barrier that allows hot air to escape from the attic. It is superior to many more elaborate and expensive venting systems.



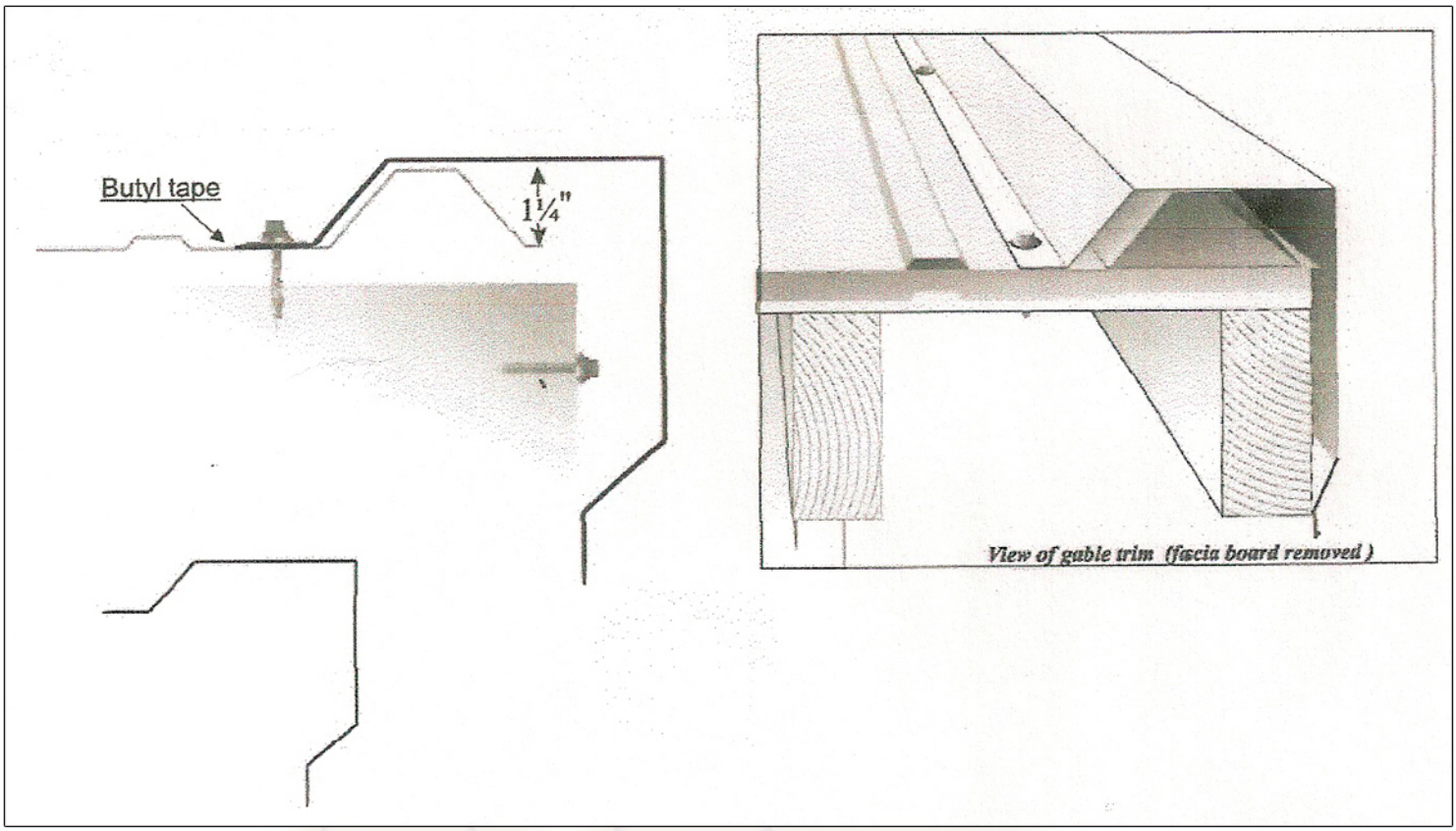
7f) Install Sidewall Flashing (if applicable)

- Sidewall flashing is applied when the side of the roof butts up against an adjacent wall. The wall-side of the flashing can either be covered over with siding or sealed with caulk. Butyl tape should be applied where the "foot" of the flashing attaches to the roof, and if used, along the top edge of the counter flashing.



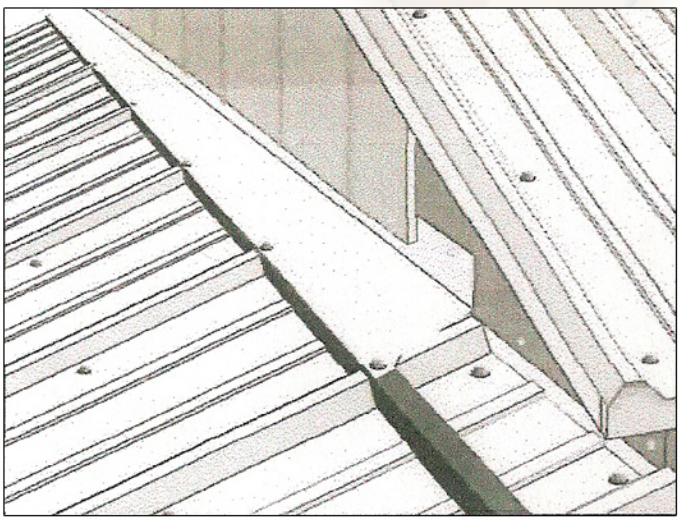
7g) Install Gable Flashings

- Gable flashing is used to trim the edge of the roofing panel at the gable end of the roof. It should match the eave drip that extends along the drip edge of the roof. If the panel is allowed to hang over the gable end, eave drip can be used instead. Butyl tape between the trim and panel eliminates leaks. Secured both to roof and rafter with screws.

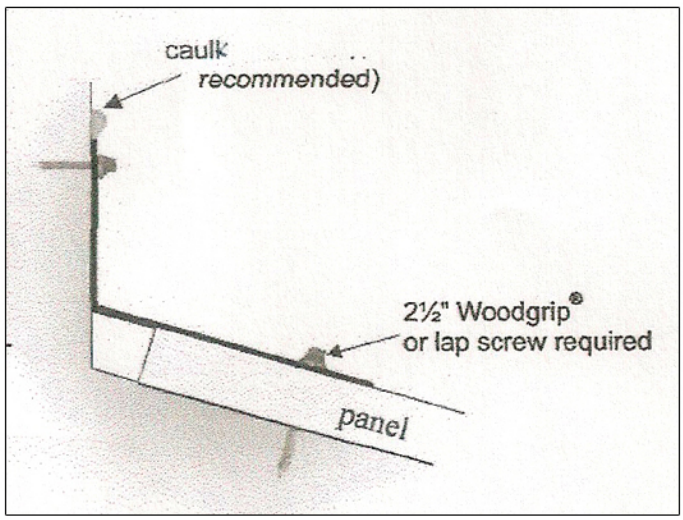


7h) Install Endwall Flashing (if applicable)

- Endwall flashing is applied where the upward slope of the roof meets a wall. The wall side of the flashing can be covered with siding or counter-flashing, and outside closures are used to seal between the flashing and the panel.

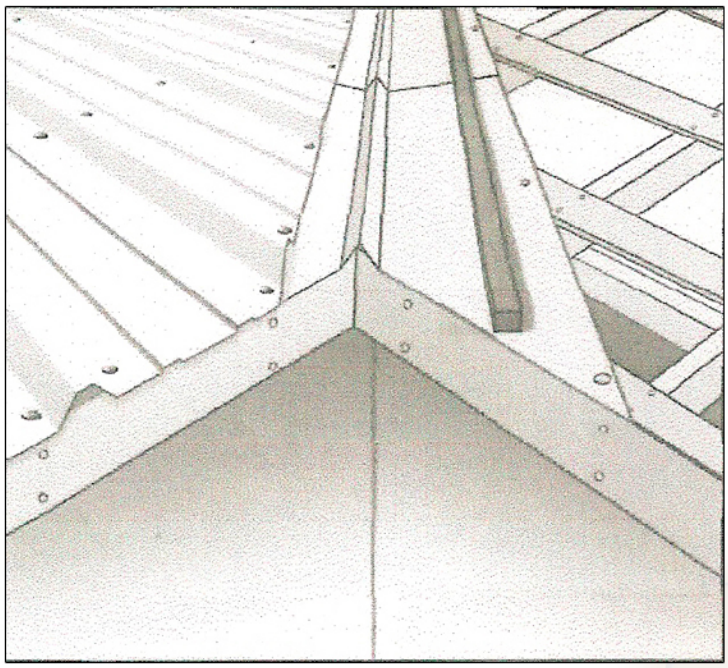


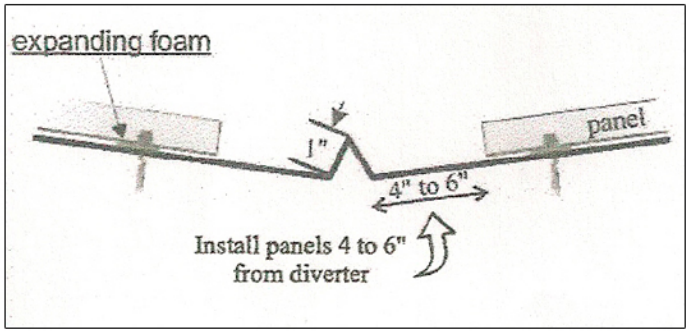
As with the Ridge Cap, the ENDWALL FLASHING above can be sealed using outside closures.



7i) Valley Detail

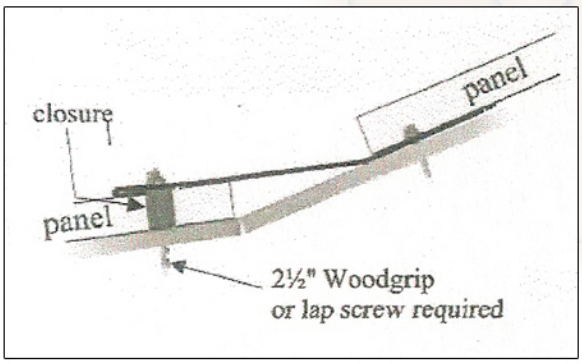
- Pre-formed valleys use a diverter to prevent water from rushing under panels on the opposite side while channeling water off the roof. Expanding foam closures (as the one shown below) are recommended to assure a good seal.

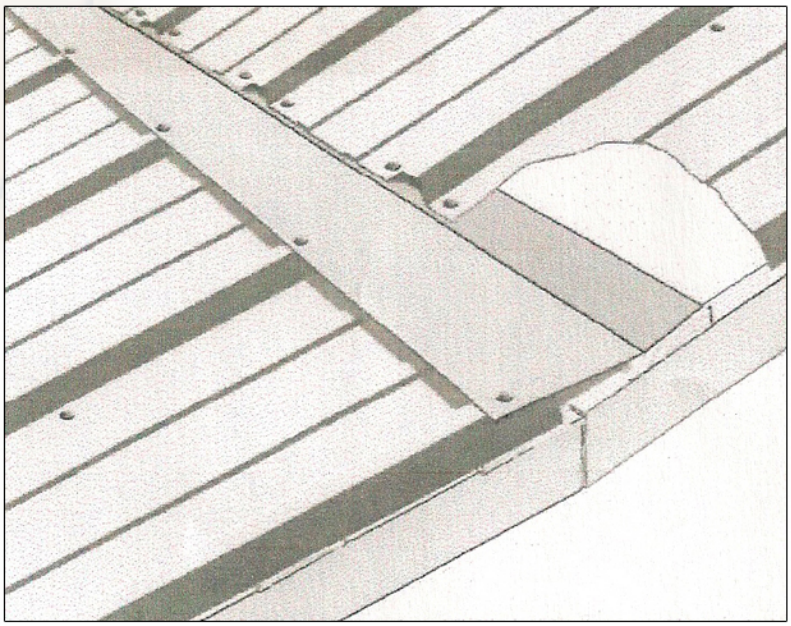




7j) Transition Detail (if applicable)

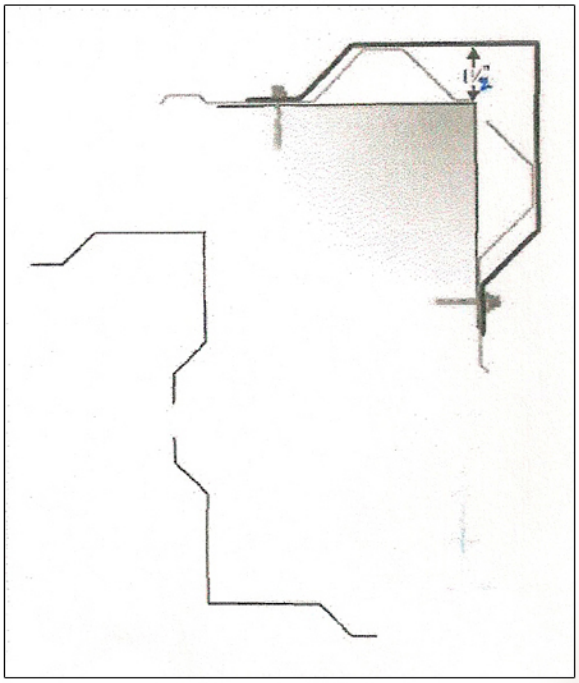
- Transition flashing prevents leakage at the point where two different roof pitches meet. It is sealed on the lower side with outside closures, and can be sealed underneath the upper panels with inside closures. The less difference there is between the two pitches, the more necessary a larger lower dimension becomes.

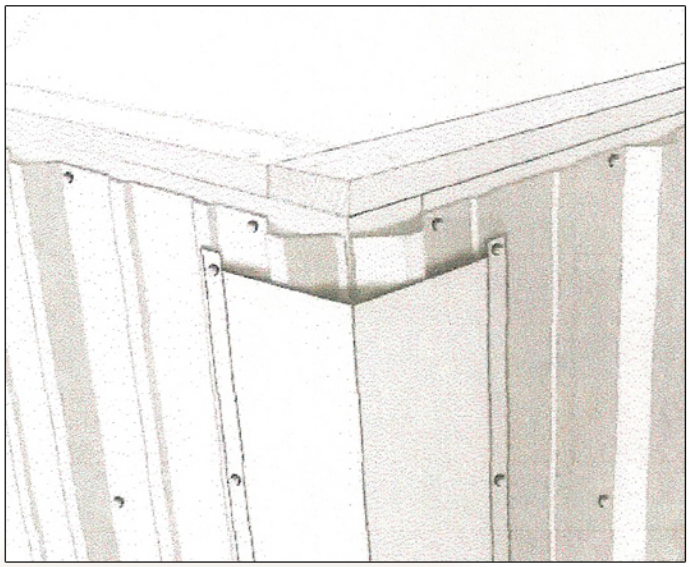




7k) Corner Trim / Gable Rake Detail

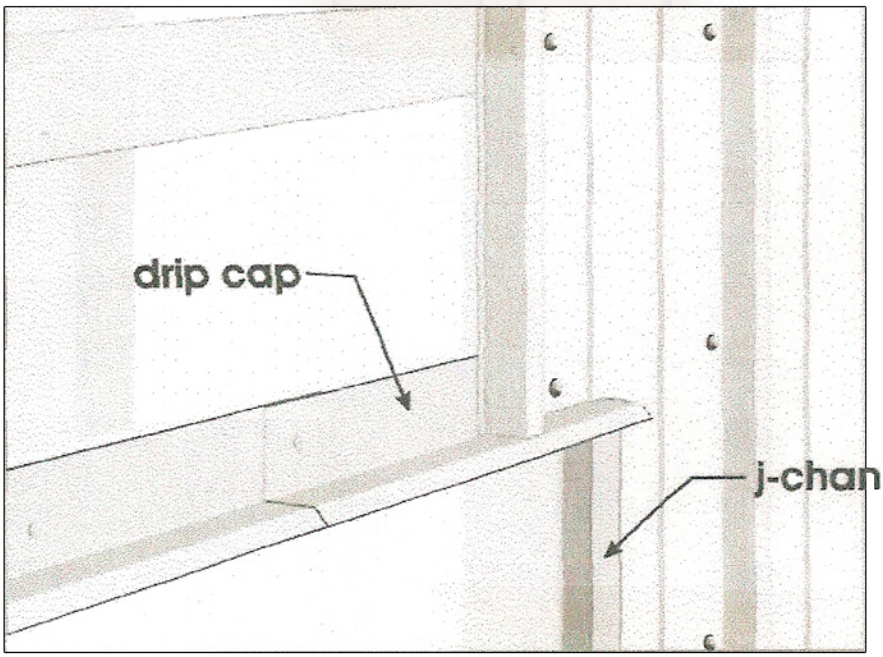
- Corner trim straddles the ribs of the panels where they meet at the corner of the building. The corner also serves as a gable rake. The side corner has a similar dimension but with a reverse middle bend.

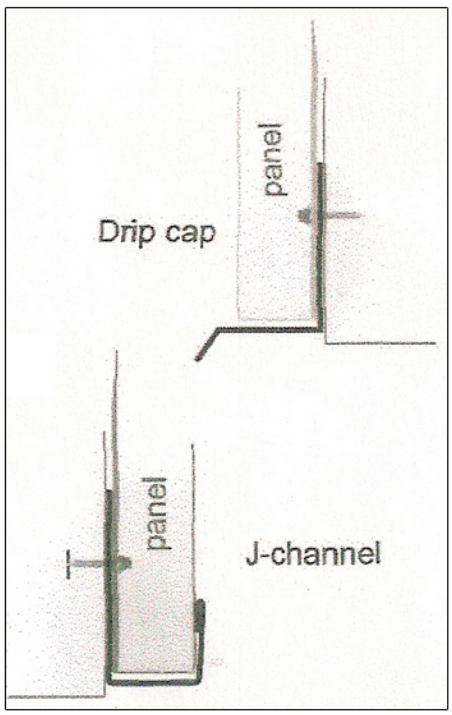




7l) Drip Flashing and J Channel

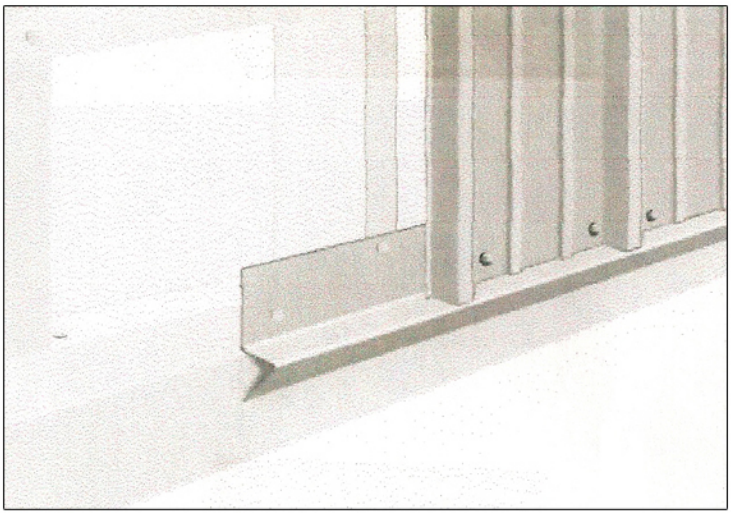
- The drip cap is commonly used to trim out the bottoms of the panels over doorways and windows, and occasionally takes the place of base drip: J-channel is used to cap raw panel edge where run-off is not a problem, and is most commonly used to trim around the bottom, sides, and occasionally the top of windows and doors, and also to cap the top sides of skirting.

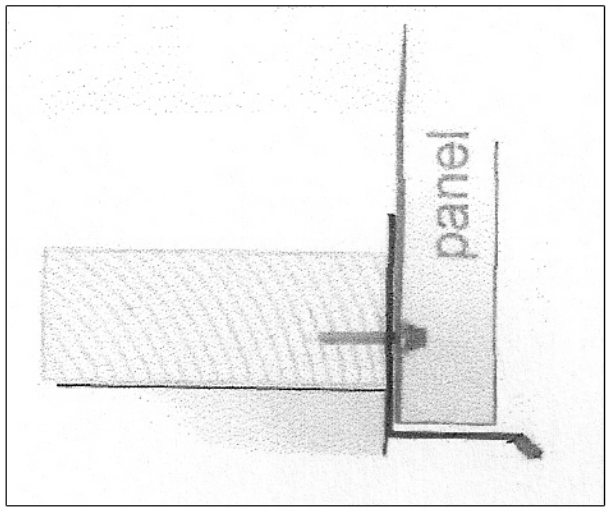




7m) Drip Flashing Detail

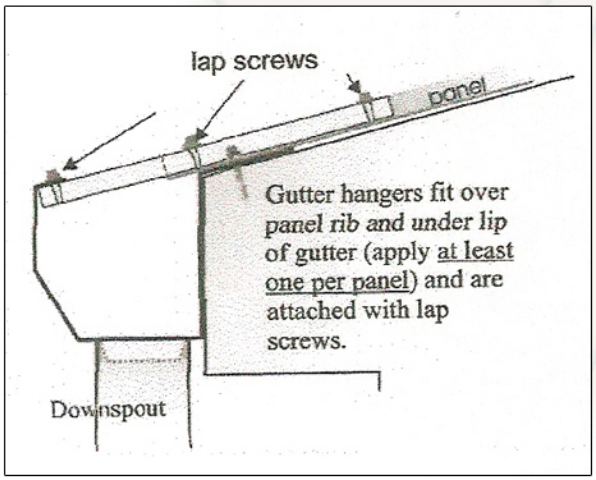
- Angle base seals off the bottoms of panels at the floor level, where it helps to prevent the entrance of rodents and insects, as well as a base for the setting of panels.

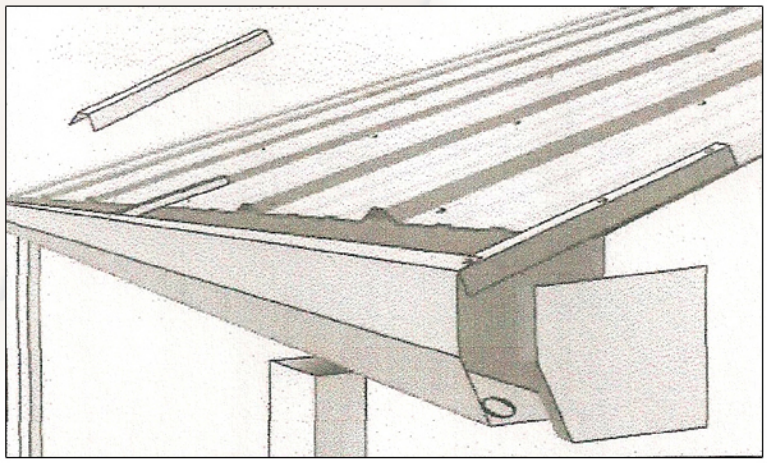




7n) Gutter Detail (if applicable)

- Exposed view of gutter showing gutter hanger placement, downspouts, and end caps. Caulk or butyl sealant under hangers will assure that the lap screws that attach to hangers are leak free. Hangers employ lap screws, and end caps are best attached with rivets.





Inner and outer gutter sections (marked "I" and "O" alternate along the eave to assure ease of application and gutter appearance.

Spray Paint

We don't sell spray paint. The paint is usually used to paint existing flashings, pipe boots, and other items that can enhance the appearance of your building. DO NOT SPRAY DIRECTLY INTO YOUR ROOF TO TOUCH UP SCRATCHES OR ABRASIONS. No spray paint can match a baked-on silicone modified polyester (SMP) paint finish. It will fade at a different rate and can be extremely visible at a later date. Steel building panels don't necessarily rust when they are scratched or cut. These panels are galvanized before they are painted. The zinc undercoating will protect exposed areas with mild scratches.

Step 8) YOU ARE FINISHED!

Remove all tools and debris from the roof. Remember, the smallest amount of metal shavings may cause rust-discoloration!

BE PROUD OF A JOB WELL DONE!!

THANK YOU FOR SELECTING

VERSAFRAME INC.

ROOFING AND SIDING.