

*Tile Panel Roofing  
Installation & Reference Guide*

**Updated: June 18, 2002**

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## *Preparation*

This product can be installed over most existing roofing. All perimeter edges must be cut back flush with the roof deck. Any loose debris should be removed prior to strapping.

For an aluminum installation all existing non-aluminum flashings should be removed and replaced with aluminum flashings.

Ensure that the roof is **straight**. Diagonals must be measured from corner to corner so as to ensure that they are equal. If they are not, the roof is in fact twisted. In this event, the roofing sheets must be laid in a manner such that the lower edge follows the eaves. Discrepancies of 20-30 mm can be adjusted with the gable trims.

**Minimum recommended roof pitch is 3:12**

**CAUTION! Step in the bottom of the corrugations when walking on the sheets.**

## *Tools*

Fasteners have a ¼” hex head. An electric drill with the appropriate socket is recommended.

Tools that may be needed are:

Sheet metal snips	Screwdriver	Wood and Masonry Blades
Ladders	Square	Power Extension Cord
Hand Brake	Roof Jacks and Plank	Paint Brush
Caulking gun	Chalk Line	Scaffolding
Circular Saw	Measuring Tape	Safety Harness
Roofing Hammer	Level	Utility Knife

**Note** that in many areas Safety Harnesses are required. Please check with local worker safety regulations.

Special profile shears are available for straight cuts to the panels. Angular cuts can be made with shears, nibbler or circular saw with a blade for metal. Note that any cuttings need to be removed from the surface of the panels.

## *Underlayment*

The entire roof area is to be covered with underlayment compliant with UL Standard Specification 55-A or equivalent. The minimum installation is one layer of Type 15 asphalt saturated organic felt. Alternatively one layer of polypropylene underlay or one layer of Type 30 or two layers of Type 15 asphalt saturated organic felt may be used.

Underlayment should be applied so that the eave row over-hangs by at least 3” into the gutter. This will be covered by the drip edge of the starter trim. The following rows should overlap one another by at least 6”. The top edge of each row should fall on to or just over each 1 x 4 strapping. This will prevent pooling water from penetrating the top or bottom edges. Also if a row of underlayment must be stopped mid-roof for any reason the end must be folded back on itself to prevent runoff. Around all protrusions, ie. Chimneys, skylights, etc., the underlayment should be turned up a minimum of 4”. Round protrusions should be papered as above with the addition of another piece of felt directly over the pipe with only the round hole cut out.

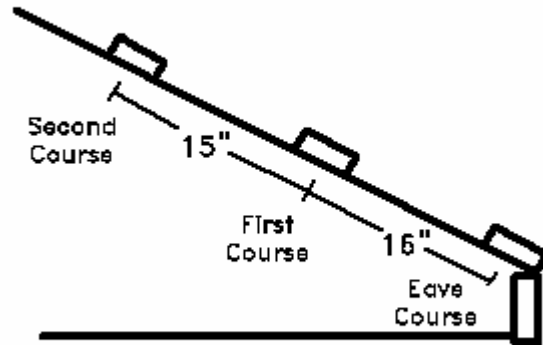
Underlayment should be fastened with 1 ½” large head roofing nails. Use aluminum nails with an aluminum installation and hot dipped galvanized steel nails with a steel installation.

## *Ice Dams*

Ice and Water Shield should be installed over any area that may be subject to ice damming. Ice & Water Shield must be installed over continuous, solid decking.

## *Strapping*

Strapping is not required if solid decking is used. Standard strapping is 1" x 4" common lumber. The tile panel screw pattern is 15" on center. Strapping should begin at the eave edge flush with the fascia board (if present). Strapping is installed parallel to the eave across the entire width of the roof. On the first course only, the spacing should be 16" on center. On the remaining courses should be 15" on center. Strapping should be fastened with 1 1/2" nails every 12 inches apart.



## *Re-Roofing*

### Re-Roof over Cedar

When re-roofing over top of existing cedar roofing 1" x 4" strapping is used. Place an additional layer of 3/8" plywood over top of the 1 x 4 strapping extending from the lower roof edge to 3 feet past the inside edge of the exterior wall of the structure.

### Re-Roof over Asphalt

When installing over asphalt shingles install underlay ovetop after trimming perimeter edges flush with fascia boards.

## *Fasteners and Fastener Pattern*

Aluminum panels require special alloy #10 stainless steel screws with ¼" hex head and aluminum washer with a butyl rubber washer.

Steel panels require specially coated # 10 steel screws coated with 500 hour minimum (salt spray resistance) galvanized coating and ¼" hex head and galvanized steel washer with a butyl rubber washer.

Panels are attached to the roof sheathing with fasteners that penetrate through or ¾ inch (19.1 mm) into the sheathing thickness, whichever is less.

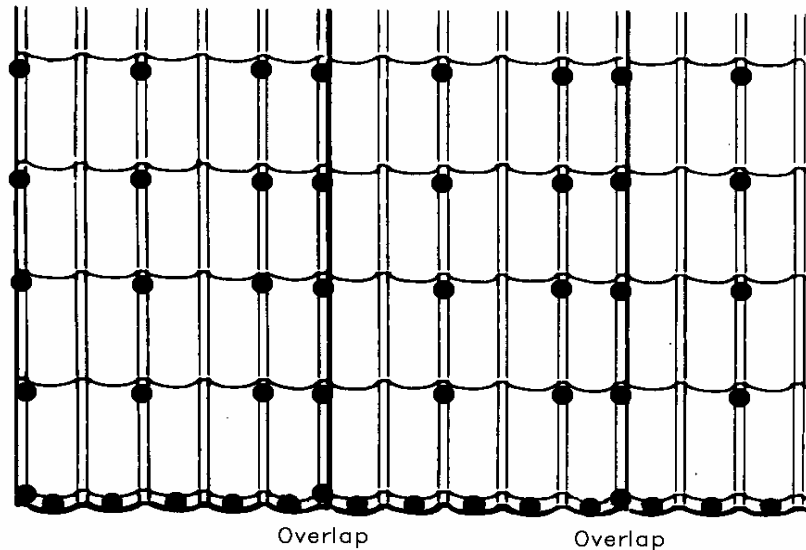
Screws come in 1", 3", 3 ½" and 4" lengths. The 3 ½" and 4" are available for going over top of existing roofing.

All screws have the head coated to color match the panels.

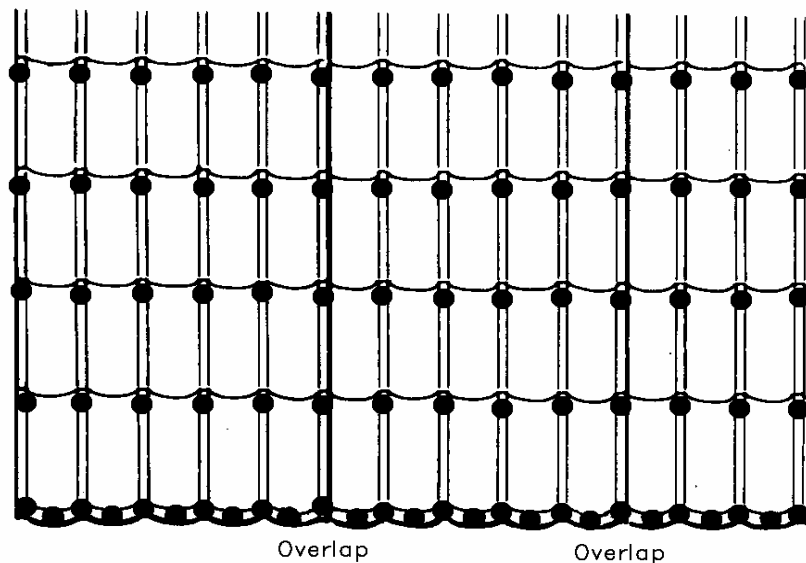
Fasteners are available from Delta Building Products Ltd.

Standard fastening pattern is recommended for most areas. For hurricane or tornado prone areas a full screw pattern is recommended.

Standard Tile Screw Fastening Pattern



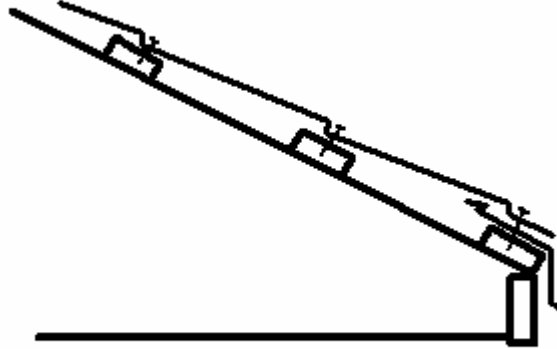
Hurricane Area Screw Fastening Pattern



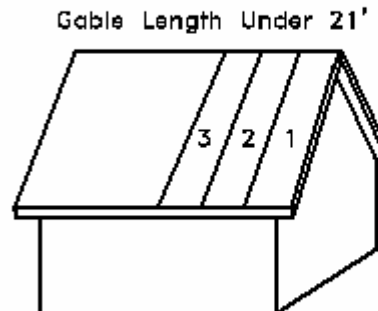
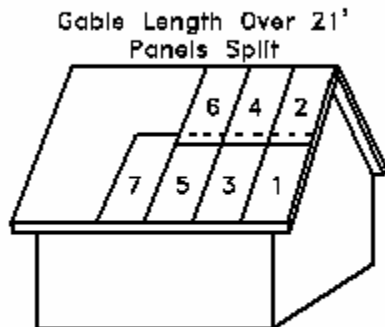
## Panel Layout

The bottom edge of the panel should be no lower than flush with the starter and no higher than 1" above the starter. Starting the panel slightly above the starter edge will usually make up for any discrepancy in the roofline. Starter should be installed to a chalk-line that has been snapped the length of the roof parallel to the roof eave edge.

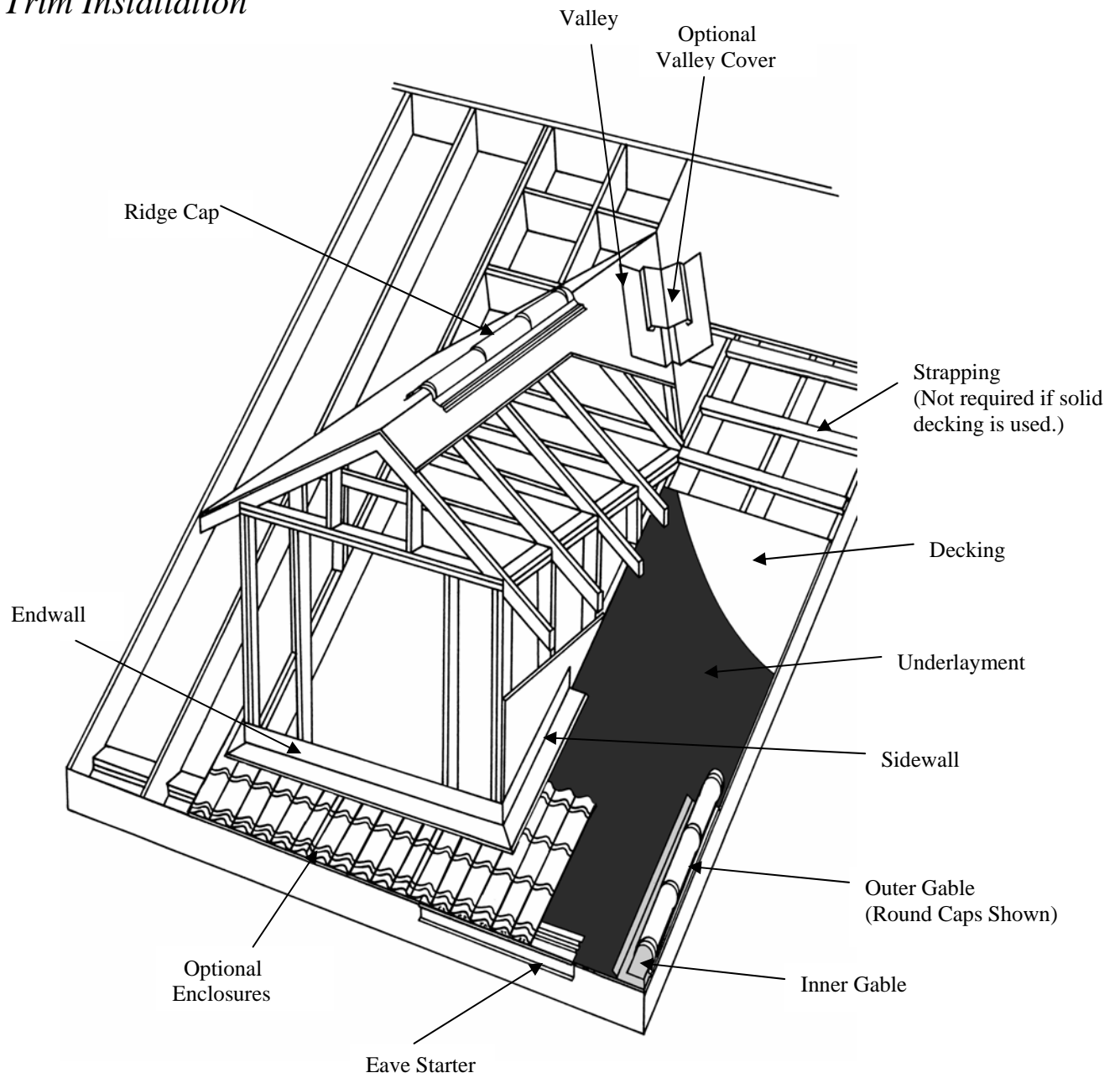
Panels must be installed 90° to the starter edge to ensure panels will install straight.



Due to the expansion / contraction of the metal it is recommended that panel length should not exceed 21 feet. Panel layout for both less than 21 feet and longer than 21 feet is shown.



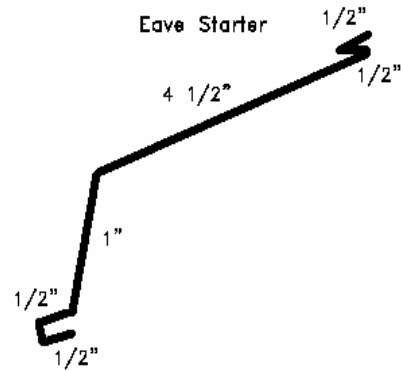
## Trim Installation



**Note** that for hurricane areas it is recommended that all trim fastener application be doubled.

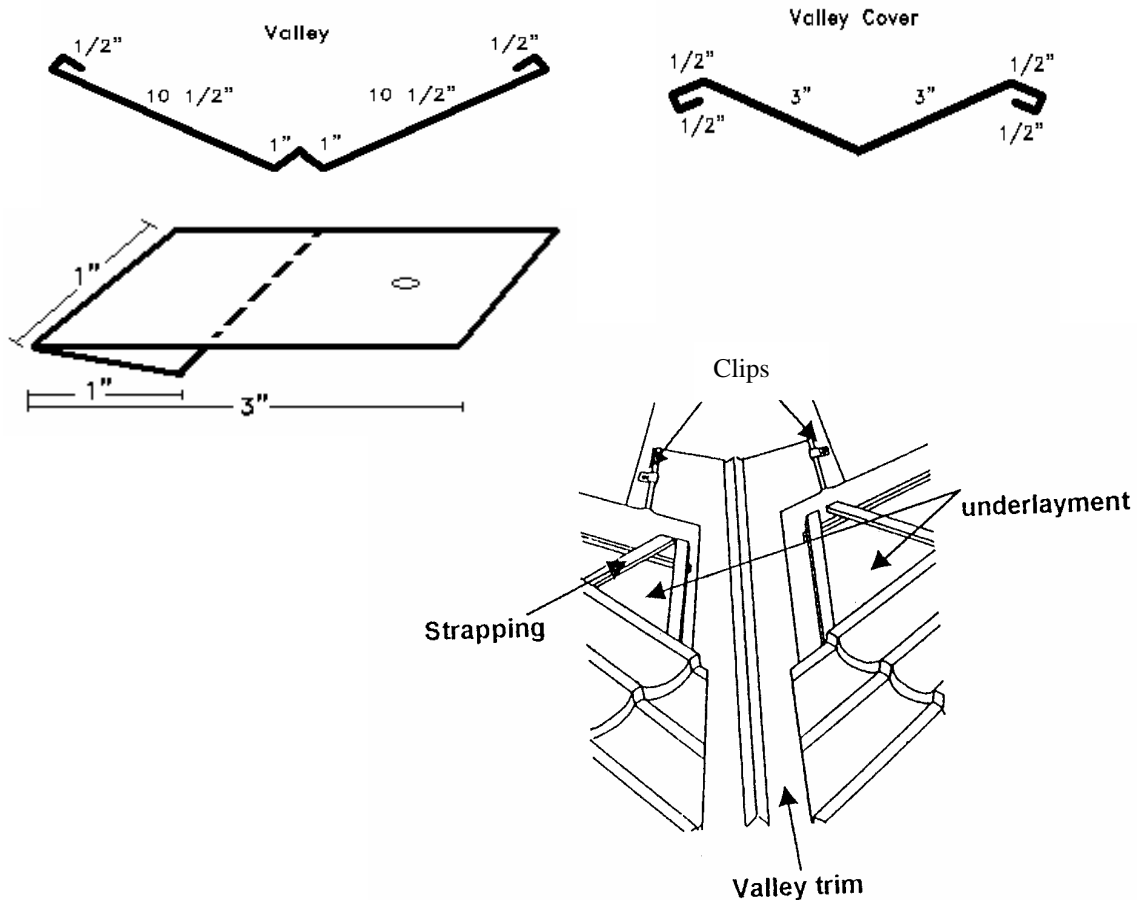
## Eave Starter

Eave Starter is applied as shown along the entire length of the roof eave. It is recommended that the eave starter be applied at a chalk line, snapped parallel to the roof eave, to ensure installation is straight. Place screws through starter into strapping at three screws per 10 feet. Also ensure a screw is placed at the overlapping joint between abutting starter trims.



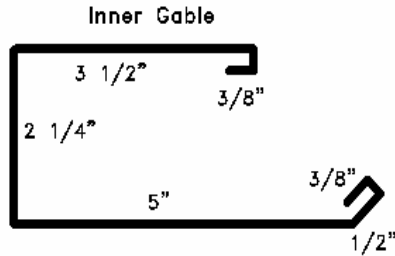
## Valley

Screws should not be placed through valley material as this may cause leakage. Screw clips should be formed out of flatstock as shown and installed at three per side for every 10 feet, placed on opposite sides of the valley.



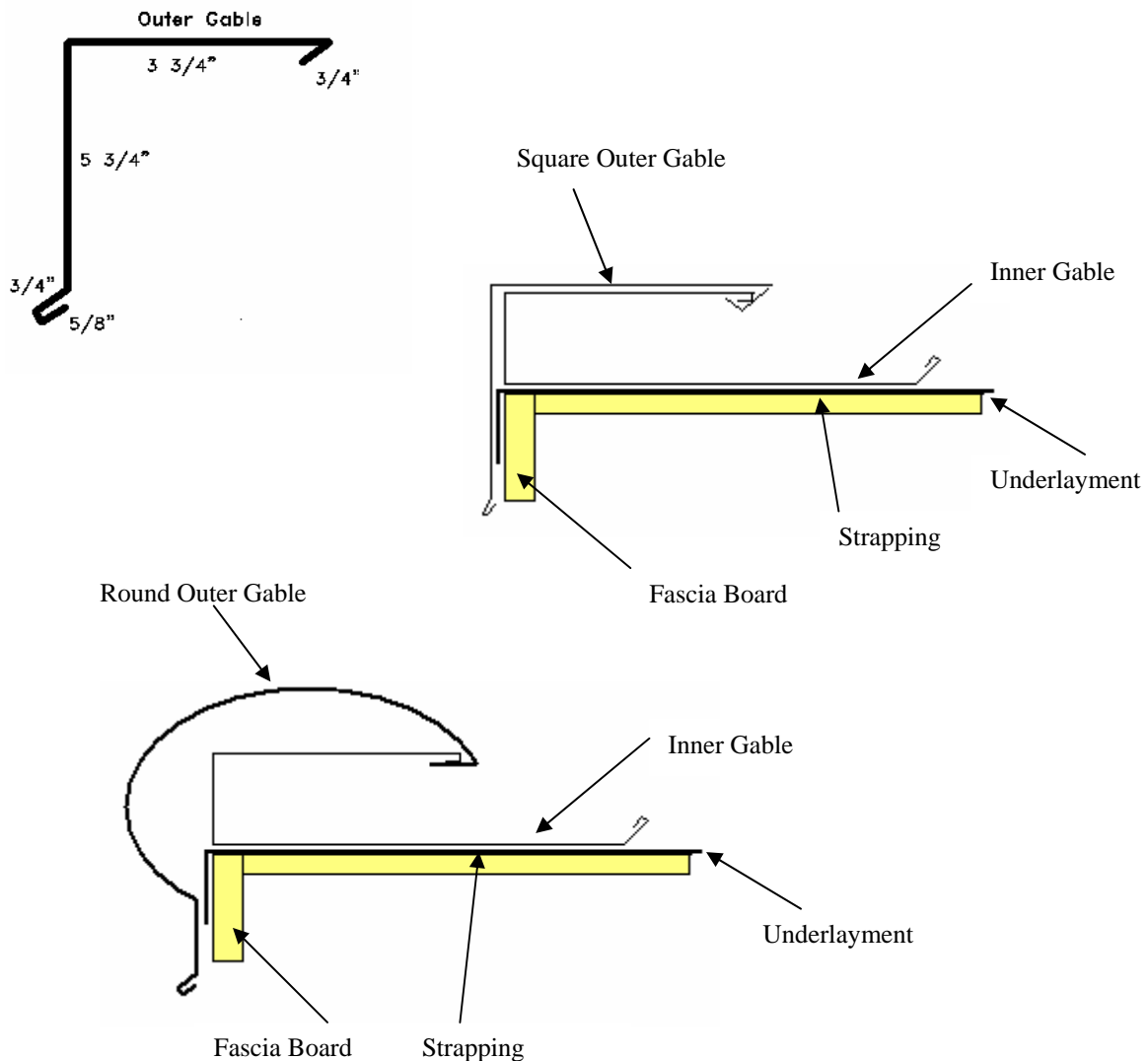
## Inner Gable (Gable Starter)

Place screws through the inner gable caps at 90° as close to the outside edge as possible, as shown. Approximately 4 screws per 10 feet is standard. Hurricane or tornado areas should have screws placed every strap. When installing the panels into the inner gable be sure it is fully inserted towards the gable.



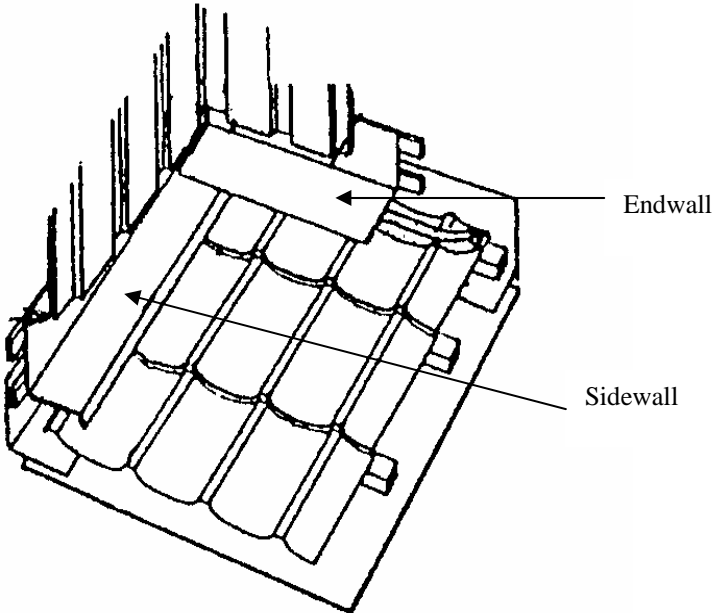
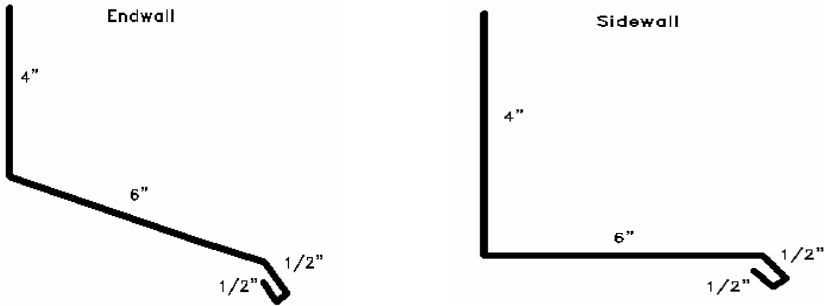
## Outer Gable

Place stitch screws from top of outer gable into inner gable at joins only. Place screws into fascia at three screws per 10 feet ensuring that a screw is placed at an overlapping joint between two outer gables.



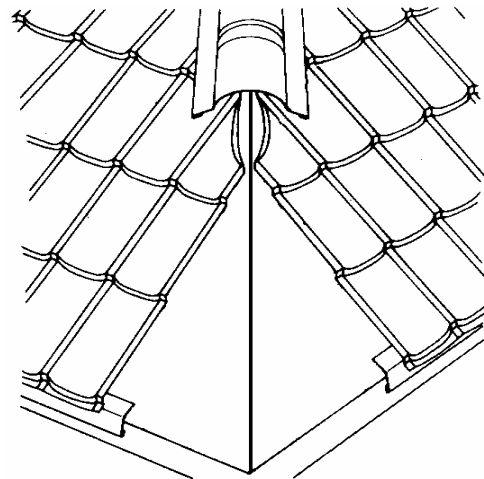
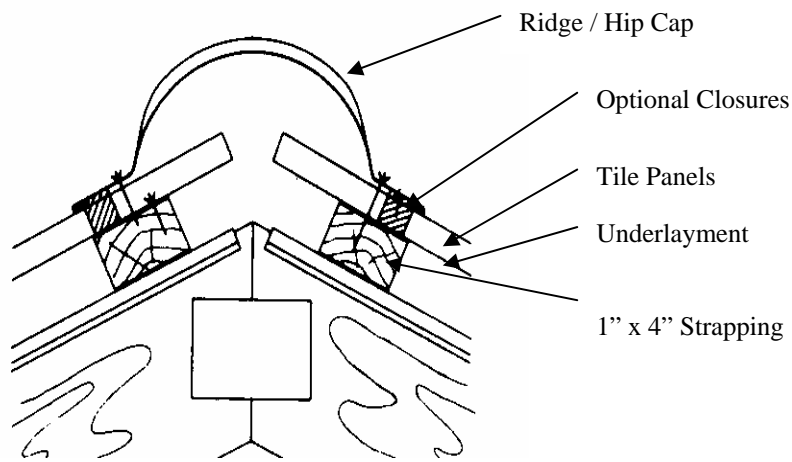
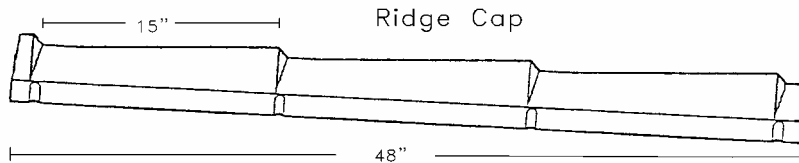
# Wall Flashings

Endwall and Sidewall should be installed behind siding wherever possible. Screws should be installed at three per 10 feet into the wall side. A 1" stitch screw should be applied at overlapping joints on the roof side, ensuring that the drip edge of the screw would be over top of the panels.

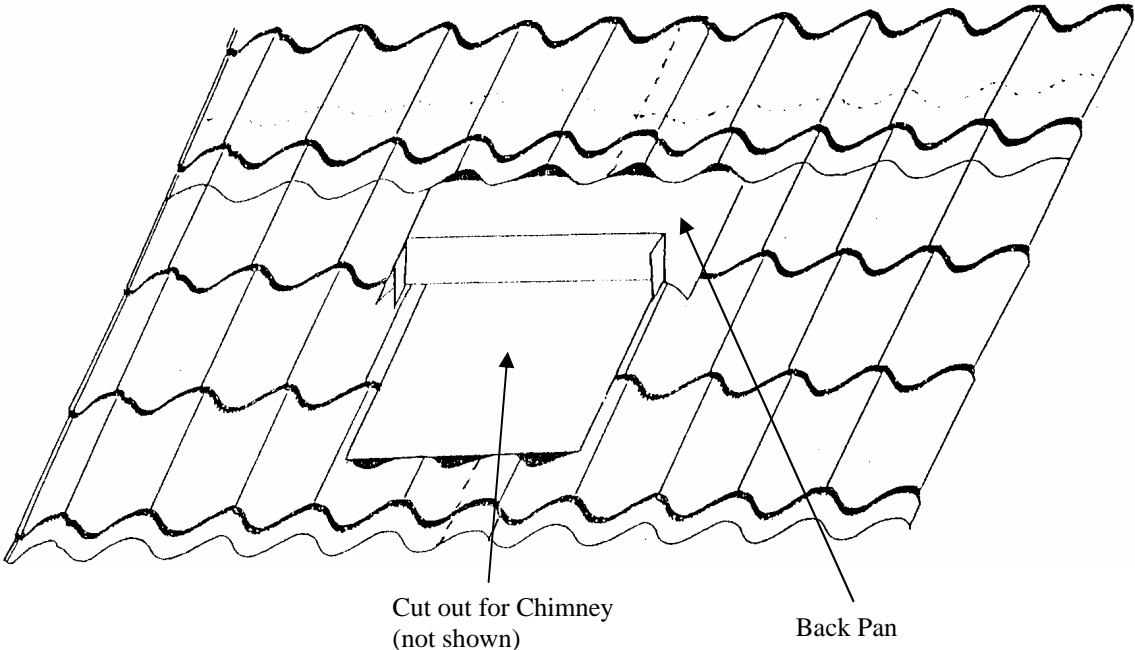


## Ridge and Hip Cap

Closures are available as an option. If closures are being installed they should be installed before installing the ridge or hip caps. The ridge cap is screwed into every second raised profile of the panels with the screws penetrating the strapping.



*Chimney and Skylight Flashing*



## Pipe Flashing

Pipe flashings are available in standard rubber and in silicone for high temperature roof pipes. A hole the size of the pipe is cut into the panel before installing the panel. Pipe flashings are self-sealing although a bead of exterior sealant around the base is recommended. Screws should be 1" long and be spaced approximately 1 1/4" apart around the pipe flashing.

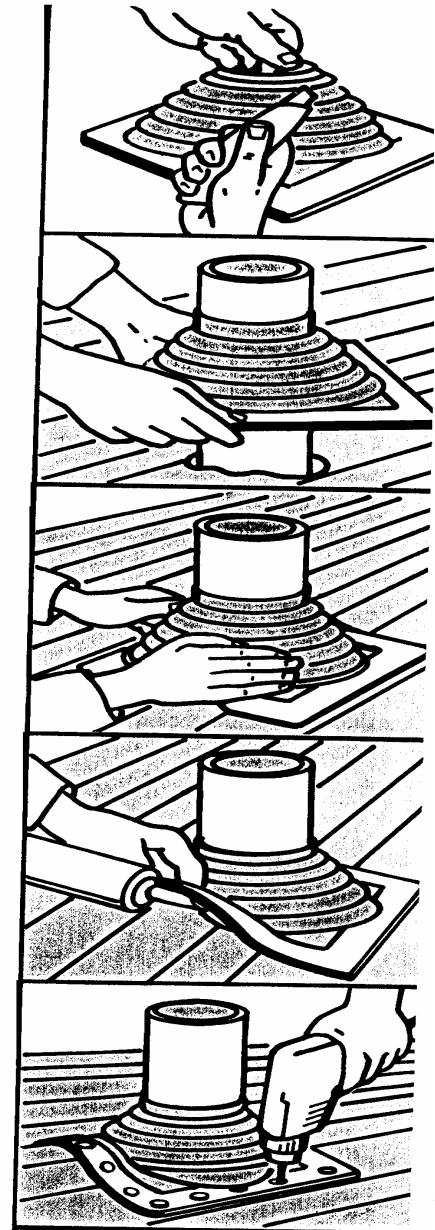
Choose appropriate pipe flashing with opening at least 20% smaller than pipe diameter. If necessary, trim opening to 20% smaller than pipe diameter.

Install pipe flashing onto pipe and over panel.

Form fit the metal edge to the shape of the panel.

Apply exterior sealant to base of flashing and place over panel.

Fasten through metal edge into panels with 1" screws, placed approximately 1 1/4" apart.



## Closures

Closures are made from a closed-cell rubber foam cut to the profile of the tile panels. They are available for Starter, Ridge, Hip Right, Hip Left, Valley Right and Valley Left. There is an adhesive strip on the side of the closure to be placed against the panel. Closures are installed before screwing down the caps. Closures are available from Delta Building Products Ltd.