

1.0 INTRODUCTION

Please read these assembly instructions thoroughly before commencing the construction. Double check all dimensions, levels and bolting locations before cutting, screwing or bolting structural members. It is recommended that the persons erecting the structure have had some previous building experience because some modifications to the existing house structure are required.

2.0 ATTACHING TO AN EXISTING STRUCTURE

The builder is to ensure the existing house/structure is of a suitable structural integrity and complies with all the relevant Australian Building codes and standards. For more information regarding the suitability of the house structure to accommodate the Stratco Attached Multispan Gable, consult a structural engineer or a building authority. It is the builders responsibility to ensure that the existing house roof structure is strengthened correctly.

Refer to Section 2.1 if attaching Multispan Gable on it's side to a house, Section 2.2 if attaching on it's end to a house or refer to both Sections if attaching the gable on it's side and end.

2.1 ATTACHING ON SIDE TO HOUSE

A Stratco Multispan attached on it's side to a house is attached to the existing eaves overhang at the fascia or to an existing wall if height permits.

The first objective in the construction is to fix a structural side beam along the fascia or wall, to which the Gable Unit is attached. Most existing houses have not been designed for the attachment of portal framed gables to their side, therefore additional strengthening of the house rafters must be performed.

In order to strengthen the existing house rafters, the roof tiles or roof sheets need to be lifted, to expose the roof frame. Steel rafter brackets and channels are then bolted along the house rafters. Refer to Section 2.1.1.

A 150mm Outback beam is bolted to the strengthening brackets at the fascia. Once the 150 attachment beam is secured to the house, the Gable Unit can be erected and fastened to the beam.

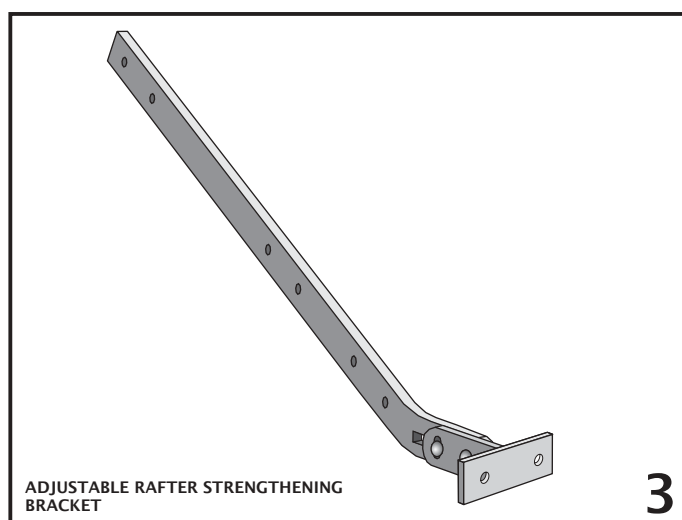
2.1.1 RAFTER STRENGTHENING

The first step is to determine the number of rafters which need to be strengthened and their location relative to the unit. You will have to lift some roof tiles or roof sheets to discover the rafter positions and spacings. The number of rafters which need to be strengthened is determined by the builder, however, spacing is recommended not to exceed 1200mm.

Note: It is the builders responsibility to ensure the existing rafters and fascia are adequately reinforced and strengthened to accommodate any additional attached structure. The reinforcing method must be approved by the appropriate council or engineer.

It is recommended an adjustable rafter strengthening bracket is used in conjunction with an extension channel, as shown in Figure 4.

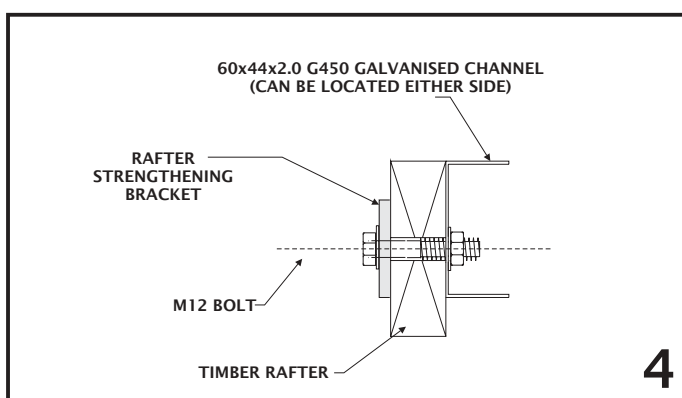
The adjustable rafter strengthening bracket is shown in Figure 3. Please note that this bracket may not be suitable for applications where the front face of the house gutter is higher than 120 mm. In these cases please contact Stratco for alternative solutions.

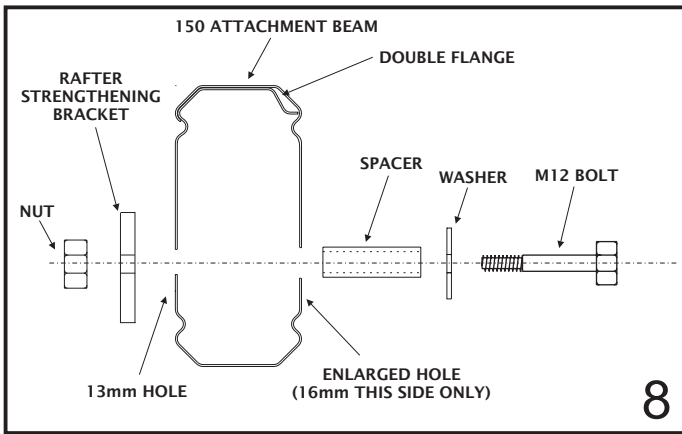


Fixing Rafter Strengthening Brackets and Channels

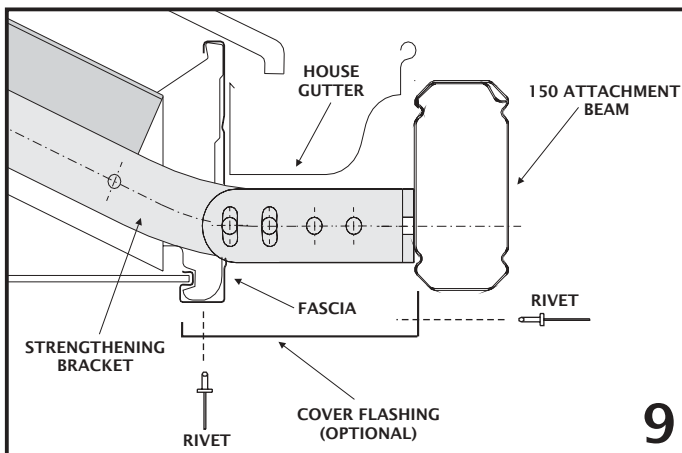
The adjustable rafter strengthening bracket allows for an adjustment of pitch in the range of 15 to 30 degrees. The distance the bracket extends past the fascia is also adjustable to allow for standard gutters (minimum extension) or box gutters with a width of up to 200mm.

In conjunction with rafter strengthening brackets, a channel is fixed to the side of the house rafter (Figure 4). The bottom end of the channel will be located at the base of the house rafter. Holes should be marked and pre-drilled in the channel to suit the location of existing holes in the bracket. The channel will extend beyond the bracket so additional holes are to be drilled in the channel at approximately 500mm centres.





A cover flashing may be ordered as an additional option and custom made to cover the exposed brackets and holes through the fascia. Rivet flashing in place, Figure 9 suggests a simplified flashing, however you may decide to use your imagination and design a flashing that suits your individual taste.



Note: It is the builders responsibility to ensure the existing rafters and fascia are adequately reinforced and tied down to accommodate any additional attached structure loads.

2.2 ATTACHING ON END TO HOUSE

If fixing a Multispan Gable on its end to a wall, two alternatives are available. Purlins are fixed directly to the wall using 68mm wall brackets and valley beams using beam to wall brackets. This option will not require a rear gable frame and back channel is fixed to the wall to accommodate sheets running along the wall. The other alternative requires valley beams be fixed to the wall and a rear gable frame installed for fixing purlins. The rear gable frame will need to be slightly offset from the wall to allow the appropriate bracket fixing.

If fixing a Multispan Gable on its end with suspension brackets to a fascia (Figure 10), typically a soaker flashing is used. In this case the gable rafter at the rear of the unit is to be set back sufficiently from the house fascia to accommodate the house gutter and infill panel (refer Figures 20 and 21).

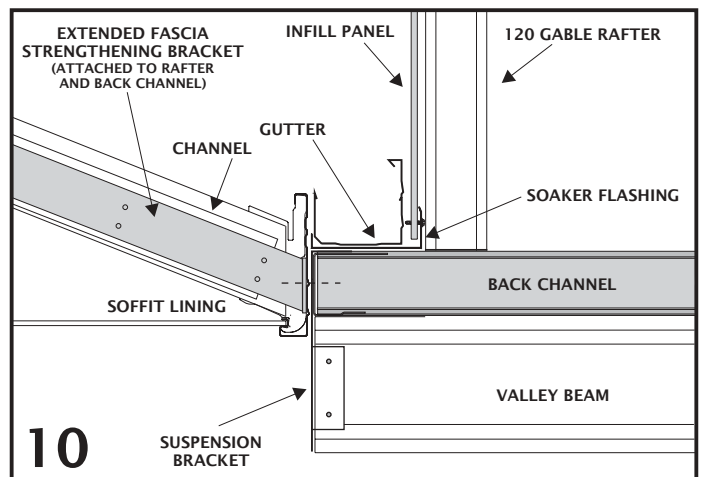
If fixing a Multispan Gable on its end to an attachment beam, elevated to the existing house gutter height, the attachment beam is to be as close as possible

(within 5mm) to the outside face of the gutter (Figure 22). The 150 attachment beam is fixed to rafter strengthening brackets as detailed in Section 2.1.1.

2.2.1 FASCIA STRENGTHENING

It is recommended extended fascia strengthening brackets are fastened at a spacing not exceeding 1200mm centres to fascia and rafters (Figure 10). Brackets and reinforcement channels are also recommended to the first rafter either side of the valley beams. Secure brackets to rafters with 12x25 timber fixing screws through pre-drilled holes and bolt through backchannel and fascia with M10 bolts. Install channels as specified in Section 2.1.1.

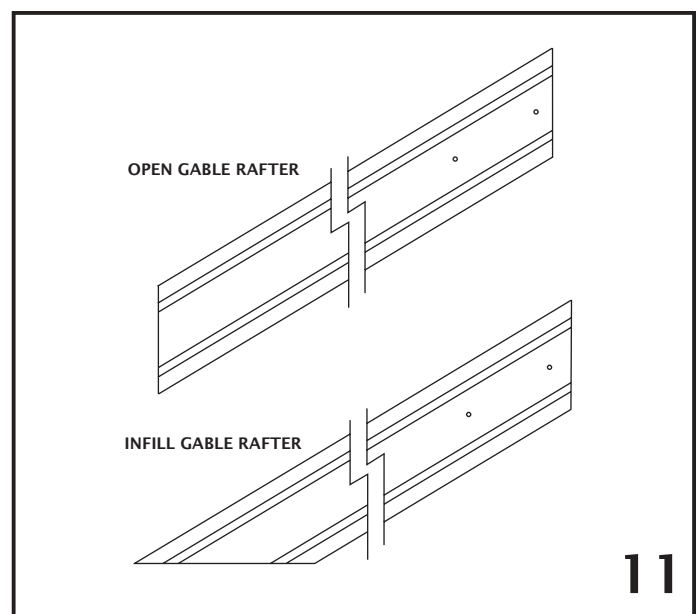
Note: It is the builders responsibility to ensure the existing rafters and fascia are adequately reinforced and tied down to accommodate any additional attached structure loads.



3.0 GABLE FRAME ASSEMBLY

IMPORTANT: Ensure that the double flange portion is at the top when installing all beams and rafters.

Note: The rafters are supplied pre-cut and drilled at the ridge as shown in Figure 11.



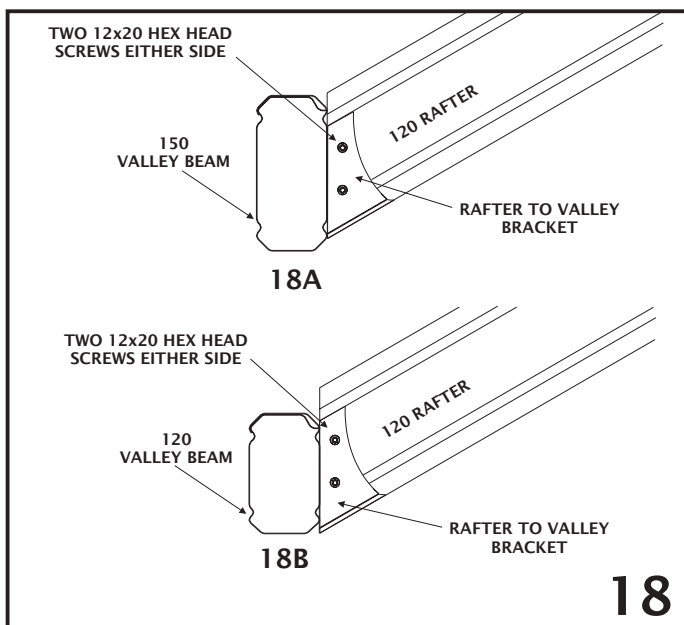
5.0 GABLE FRAME CONNECTION

Note: Be aware that gable frames are always 120 beams, however valley beams may consist of either 120 or 150 beams which will effect the position of the gable frame relative to the valley beam. Refer Figure 18 for rafter position.

5.1 GABLE FRAMES

If no infill is to be used at the front of the gable section (Figure 1), connect the rafter to valley beam brackets at the front of valley beams.

The rafter to valley brackets are attached to the valley beams using six 12x20 hex head screws (Figure 14, Section 4) at the appropriate locations.



Fix the gable rafters into the rafter to valley brackets with two 12x 20 hex head screws either side (Figure 18).

If attached on the end, attach the second valley beam into position.

Intermediate frames should be spaced evenly and fixed into rafter to valley brackets as previously described.

If the rear gable frame has no header beam (no infill) it is fixed as per an intermediate frame.

5.2. GABLE FRAME WITH INFILL

5.2.1 FRONT INFILL (Figure 2)

Where there is an infill at the front of the unit (and/or rear, in the case of side attached), run the front fascia beam of the flat roof section (if applicable) continuously across the opening to support the infill panel and form a header beam (the gutter

subsequently runs full length of the header beam). Measure the end gable frame opening and attach end rafter brackets to the header beam at the appropriate spacing using six 10 - 16 x 16 hex head self drilling screws.

Fasten the rafters that form the end gable frame into the end rafter brackets with a minimum of two 10x16 hex head screws either side (Figure 19).

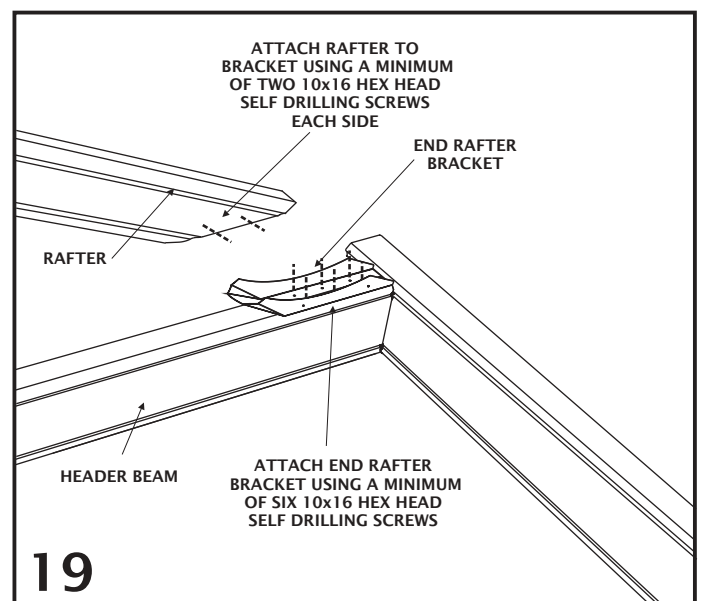
5.2.2 REAR INFILL

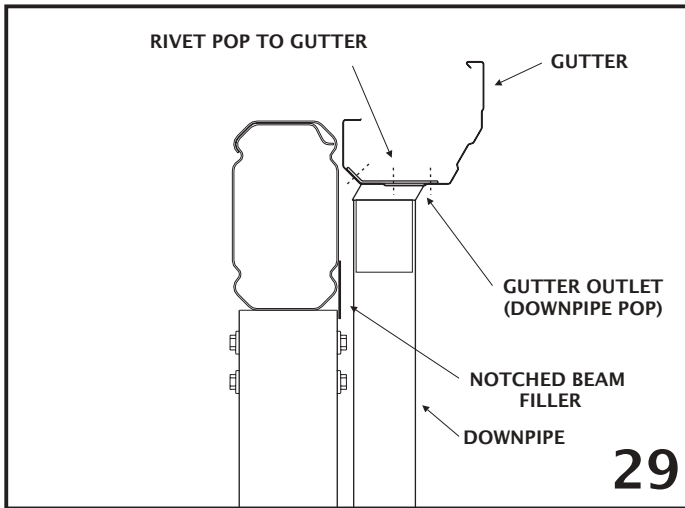
A rear header beam will be required if the unit includes infill to the rear gable frame. For units attached at the rear with suspension brackets, the rear header is fixed between valley beams using beam to beam brackets. If fixed at the rear to an attachment beam (Figure 22), the attachment beam becomes the header (valley beams are fixed to the header beam) and if attached on the side the rear header is fixed to the attachment beam with beam to beam brackets.

Measure the end gable frame opening and attach end rafter brackets to the rear header beam at the appropriate spacing using six 10x16 hex head self drilling screws (Figure 19).

Fasten the rafters that form the end gable frame into the end rafter brackets with a minimum of two 10x16 hex head screws either side (Figure 19).

Refer Section 14 for details of fixing infill panels to gable frames.





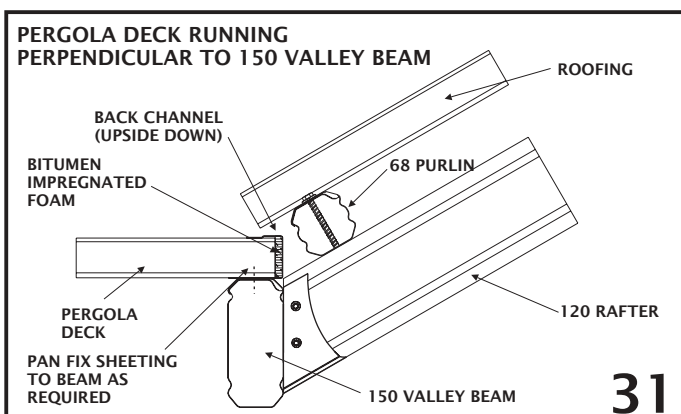
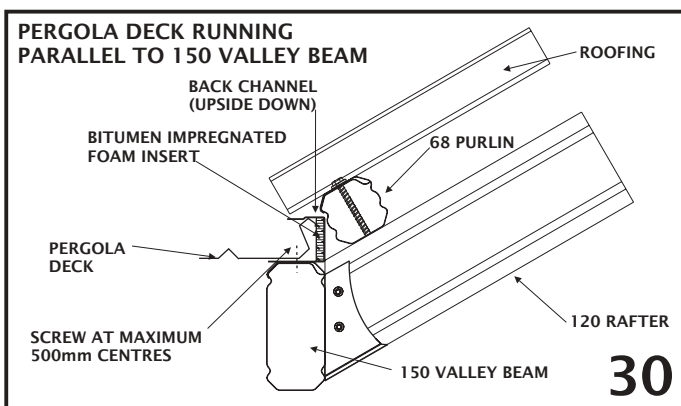
12.0 ATTACH DECKING

12.1 FLAT ROOF (IF APPLICABLE)

Attach the decking to the flat roof verandah first as laid out under "DECKING" ('Pergola Flat Attached Verandah, Patios & Carports'), starting from the valley beam and working away, on both sides.

The back channel is attached upside down (the shorter leg on top) along valley beams to assist the fixing of decking. (Figures 30 and 31). The channel extends to the end of the valley beams. Screw roofing through the back channel into the beam to standard fixing requirements.

Figure 30 shows the back channel and Pergola deck running parallel fixed to a 150 valley beam. Figure 31 shows the back channel and Pergola deck running perpendicular to a 150 valley beam.



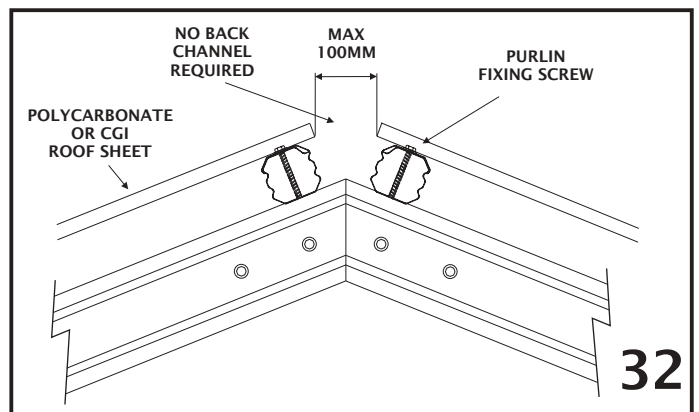
12.2 MULTISPAN GABLE

When attaching the decking to the gable, start from the front, aligning the sheets so as to avoid the purlin fixing screws.

If the deck of the flat roof section runs perpendicular to the valley beams, align the ribs of the gable decking up with the flat roof section. Fix the decking so that it is level with the top of the flat deck, and so there is a maximum 100 mm gap at the ridge (Figure 32).

When using polycarbonate or corrugated roofing no back channel is required at the ridge. When Pergola deck is used, back channel is required at the ridge, and is supplied with the unit (Figure 33).

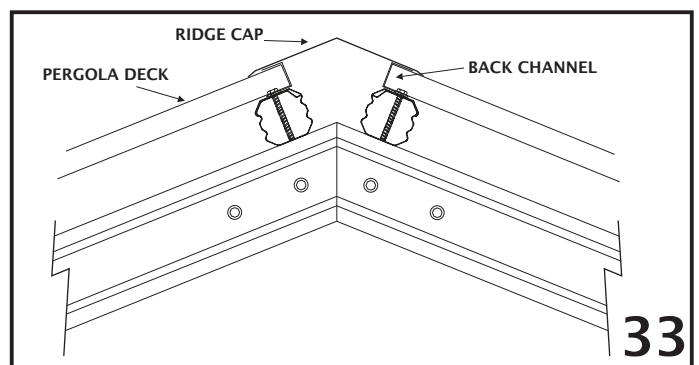
For polycarbonate roofing, screws include special 'polycarbonate' washers and 10mm holes are to be pre-drilled in the sheeting prior to fixing to allow for thermal expansion.



13.0 RIDGE CAPPING

13.1 STANDARD RIDGE CAP

For Pergola deck slide back channel over the ridge end of the deck and rivet into place. Position the ridge cap over the two back channels and screw or rivet into the channel (Figure 33).



For polycarbonate and corrugated roofing screw or rivet (depending on ridge cap style) the ridge cap directly onto the top of the deck. Waterproof rivets with silicone.

Note: Do not rivet to polycarbonate decking, screw only.

13.2 PERGOLA VENTRIDGE

Fit the vent ridge stop ends over either end of the vent ridge base using their tabs to locate and hold them in place. Secure the bottom tab of the stop ends to the base from above with a 4-3 rivet either side.

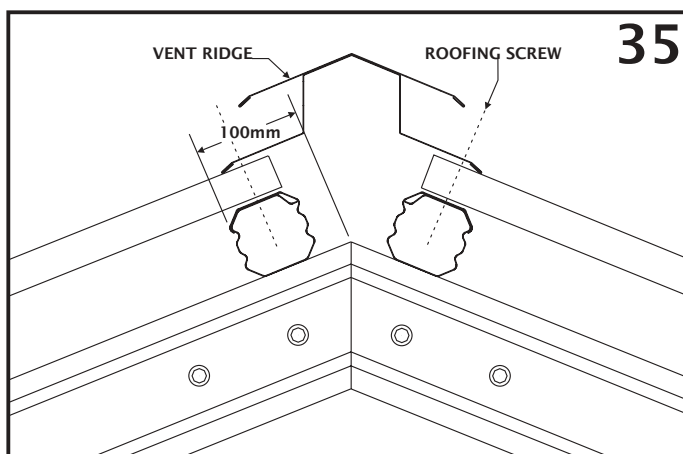
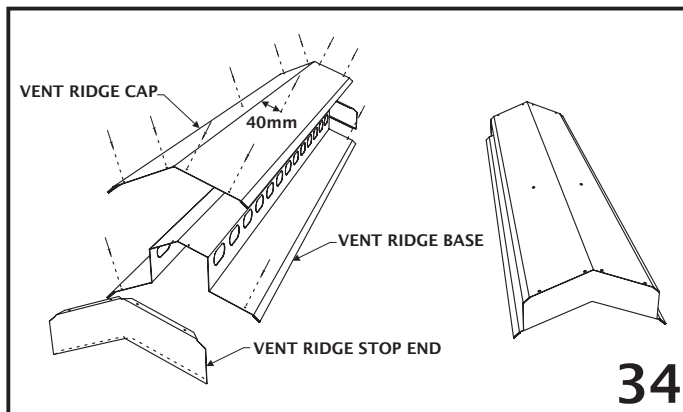
Lift the base onto the apex of your gable unit. Secure through the base and roofing sheets into the purlin below at maximum 900mm centres either side using standard CGI or polycarbonate roofing screws as required (Figure 35). For polycarbonate roofing, pre-drill 10mm diameter holes through the base and roof sheet prior to fixing.

Place the vent ridge cap on top of this assembly making sure to keep the ends flush with the outside surfaces of the stop ends.

Starting at one end, evenly space four 4-3 rivets (two either side of the apex) 5mm in from the edge. Ensure that the top two rivet nearest the apex on either side goes through all three components to fasten the cap to the stop end and the base; the outer rivet will fasten the cap to the stop end.

Repeat this on the other end and then secure the cap to the base at maximum 900mm centres using a 4-3 rivet 40mm out from the apex on both sides.

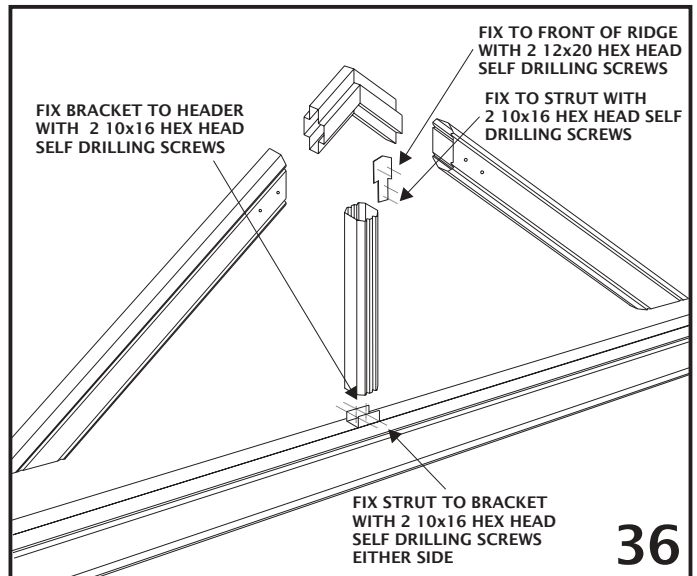
Waterproof all rivets with silicone.



14.0 INFILL PANELS

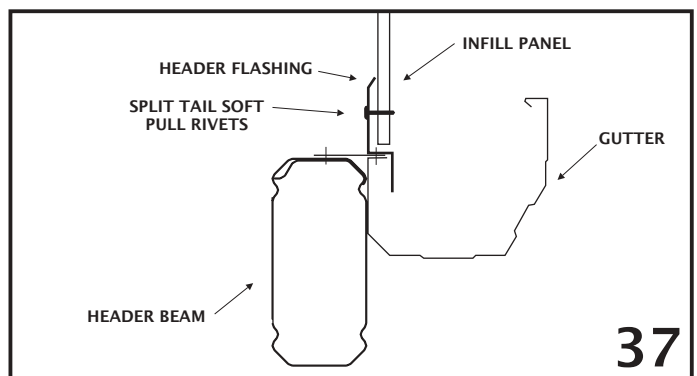
Two styles of header flashings are available to neatly finish the base of infill panels, one is used on header beams with gutter and the other for headers without gutter. Gable infill panels are to be cut in triangular shapes to fit the end frame. Panels can be painted to the desired colour before installing.

End struts are fixed mid-span of the header to a header beam bracket at the base and an end strut plate at the ridge (Figure 36).



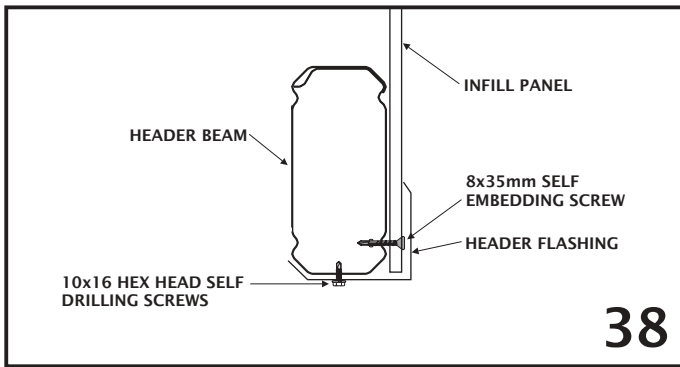
14.1 HEADER BEAM WITH GUTTER

Attach the header flashing to the rear gutter lip with rivets. Infill panels are fixed through the top groove of rafters and the end strut with 8x35mm self embedding teks at maximum 500mm centres in non-cyclonic areas and 250mm centres in cyclonic areas. Panels are fixed at the base through the header flashing with split tail soft pull rivets at maximum 500mm centres (Figure 37).



14.2 HEADER BEAM WITHOUT GUTTER

Infill panels are fixed through the top groove of rafters and the lower groove of the header beam with 8x35mm self embedding screws. Fix at maximum 500mm centres in non-cyclonic areas and 250mm centres in cyclonic areas. Panels are fixed to the end strut at the same spacings. Attach the header flashing to the underside of the header beam with 10x16 hex head screws to neatly finish the base of the infill panels (Figure 38).

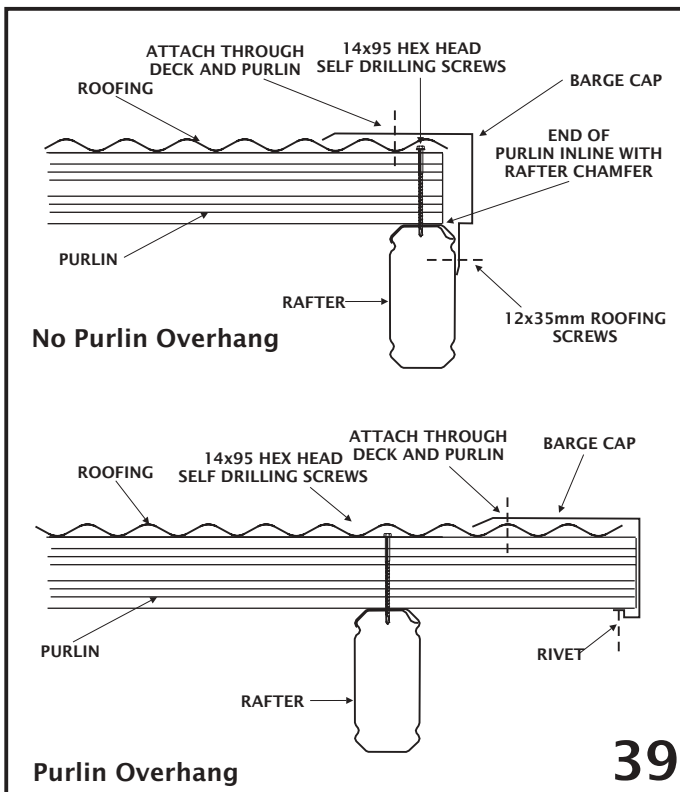


15.0 ATTACHING BARGE CAPPING

If barge capping is required at the ends of the unit, attach the barge cap by screwing the lower lip to the rafter and screw the top section to the purlin through the deck, as shown in Figure 39. Mitre the barge at the apex of the gable for a neat finish. Run the barge cap along the gable section to where it meets the flat verandah deck and finish neatly.

Note: For polycarbonate roofing, pre-drill 10mm holes in the sheeting before fixing the barge.

If infill panels have been installed, the lower lip of the barge capping should cover the panel screws to give a neat finish.



16.0 FINAL FIXING

Before securing columns in position ensure a minimum fall of 1 in 500 (12mm for every 6 m) towards downpipe/s.

16.1 FINAL FIXING INTO CONCRETE

Thoroughly check posts with a spirit level. When plumb, fill the post hole with approximately 150mm of concrete and use a shovel or pole to agitate the concrete to remove and air pockets. Repeat this process until the hole is full, continually checking the posts. Once the concrete is set remove any temporary bracing or props. The concrete must be finished slightly raised towards the column to ensure water runs away from the column.

16.2 FINAL FIXING ONTO EXISTING CONCRETE

If fixing the columns to an existing concrete slab with a footing plate, each plate must be fixed to the concrete as specified in Figures 26 or 27 as appropriate. The minimum distances from an anchor hole to the concrete edge is 75mm.

16.3 DOWNPIPES

Before attaching the downpipes, rivet the downpipe bracket to the column and bend the flanges along the 'break-line' to accept the downpipe. Slide the downpipe over the downpipe outlet and rivet into position. Rivet the downpipe to the brackets. Weatherproof all fasteners with silicone.

17.0 HELPFUL TIPS

Leave plastic coating on members until they are about to be fastened to the structure. This will help prevent scratching of the colorbond finish.

Sweep the roof and clean gutters after the completion of work. Ensure any swarf and rivet stubs are removed as they can cause unsightly rust stains.

Double check all measurements and drilling locations before proceeding.

Regularly check framework for squareness and vertical alignment to make sure it hasn't moved during construction.

Leave all construction props and/or bracing in place until concrete is set or columns are bolted to the slab.

18.0 MAINTENANCE

You have now completed your new Stratco Pergola. Your Stratco Pergola will give you many years of service by simply following the important recommendations set out in the Stratco 'Selection, Use and Maintenance' brochure.

We recommend you wash and wipe down your Stratco Pergola unit with a soft broom, mop or sponge as frequently as you would wash your car to maintain it duco. More frequent cleaning and rinsing will be required in severe environments.

