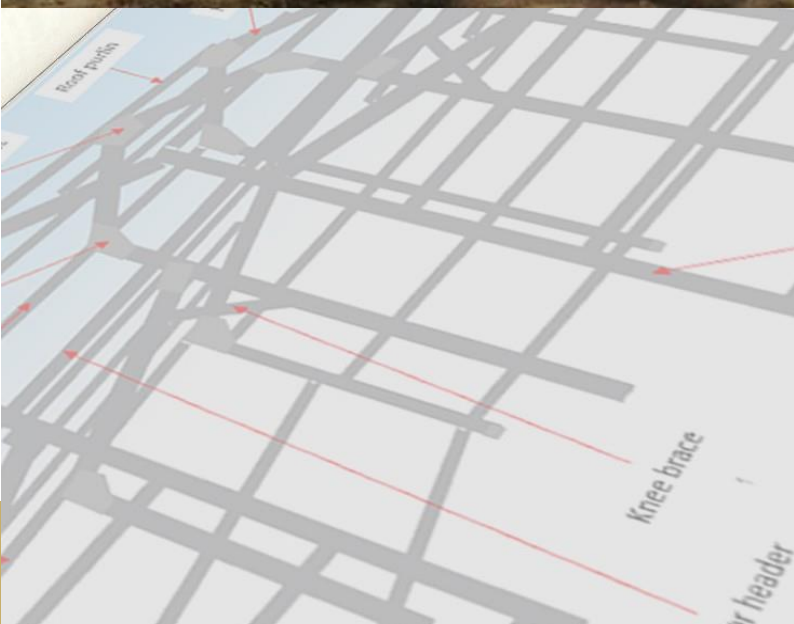


Barn Shed Installation Manual





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THANK YOU!

Thank you for choosing AltoSheds! We're a proud family business with over 23+ years of combined experience in the shed industry, and we're all about delivering great prices, top-notch quality, and unbeatable customer service.

We hope you have a blast putting your new building together! Not only will it feel rewarding, but you'll also enjoy the bonus of saving some cash by doing it yourself.

Before you start, be sure to double-check all local and state requirements so everything's above board. And if you're hiring any subcontractors, make sure they're fully licensed and insured.

For connection details and measurements, your plans have everything you need. If you have any questions, your salesperson is just a call away.

Enjoy your project, and welcome to the AltoSheds family!

CARE AND STORAGE

Zinc-coated, ZINCALUME, ®, Zinc/aluminium alloy coated steel and COLOURMASTER™ pre-painted steel roofing and walling products are normally delivered to the building site in strapped bundles.

If not required for immediate use, sheets or bundles should be neatly stacked clear of the ground. If left in the open, they should be protected from rain and moisture with tarpaulins or similar covers. On no account should steel sheeting be allowed to get wet while still bundled or nested in stacks. Rain and condensation are easily drawn between the surfaces of nested sheets by capillary action or driven in by wind action and, as this trapped moisture cannot evaporate normally, it can cause deterioration of the coating which may lead to a reduced life expectancy or poor appearance (wet storage stain).

If packs become wet the sheets should be separated without delay. The sheets should then be stacked so that air circulation completes the drying process. Wet storage stain can occur from condensation alone - even in dry weather. Therefore, keep the product dry to reduce the risks of water damage and keep storage time to a minimum.

TOOLS REQUIRED

This manual is only a guide to help you build your shed. Please follow all WHS (Work Health & Safety) guidelines. If you are not experienced in building or do not feel confident in attempting such works, it is recommended you contact a licensed builder to complete the installation of your shed.

Before lifting walls and inserting hold down bolts, ensure that concrete has been correctly cured and reached its minimum strength as specified in the engineer's plans.

What tools will you need?

- Hammer
- Tape measures
- Clamps
- Tin snips
- Socket set
- Roofing silicone and caulking gun
- Rivet Gun
- Utility knife
- Multigrips
- Permanent marker/ Builders' pencil
- Chalkline
- String line
- Spirit level
- Square
- Screw drivers
- Tek screw gun with appropriate drive bits
- Electric drill, metal drill bits
- Nibbler (alternatively tin snips)
- Grinder
- Hammer drill
- Electrical Extension leads
- Ladders
- Scissor lift/s (on larger sheds)
- Nail bag
- PPE (Personal Protection Equipment
- Earmuffs
- Safety Glasses
- Gloves
- Highly visible clothing
- Steel capped boots
- Sunscreen / Hat

NOT ALL DRILLS ARE EQUAL

It is recommended that clutched screwdrivers are used over a cordless impact driver as the impact drivers place excessive force through the screw, often drilling at a much higher RPM compared to a clutched screwdriver. The excessive stress can cause the heads to snap off the screw, especially on the framing screws.

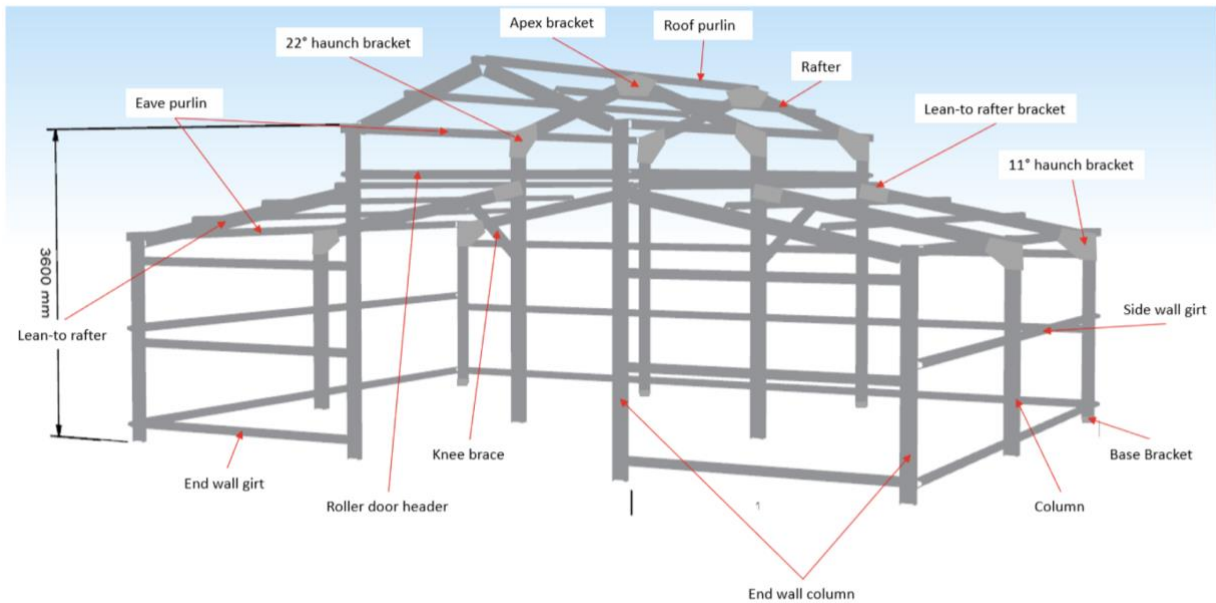
CAUTION

Extreme caution is required when handling and working with steel. Take your time when moving the steel. Always wear safety goggles. Get an assistant to help you to ensure your safety and the safety of others on site.

Let's get to work...



Barn Shed Terminology



SLAB CHECK

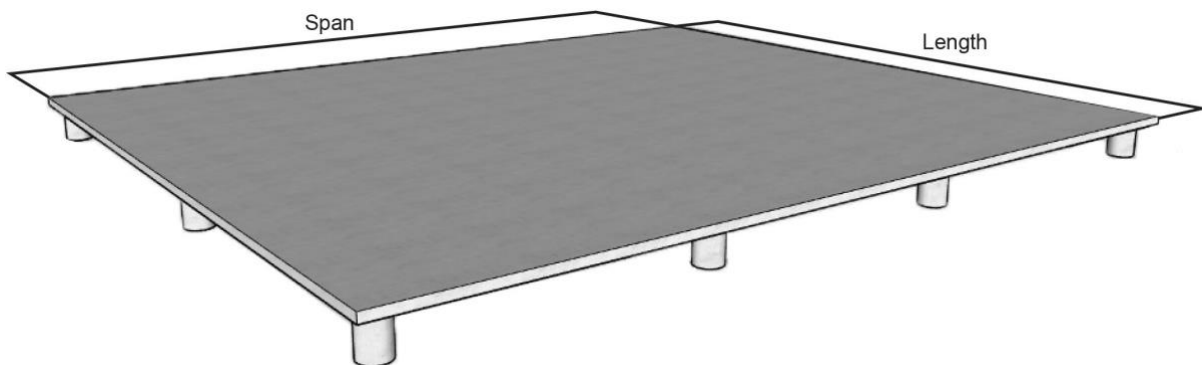
Assuming your slab is already poured to the engineer's specifications provided on your plans.

The first thing that we need to do is to measure that the slabs overall dimensions are correct and that the slab is square.

The overall dimensions for your slab will be the same as the shed size you ordered. For example: if you order a 10.5m x 9m building, then your slab will be 10.5m x 9m.

To check the slab is square you need to check that the diagonals of the slab are equal. If they are equal, then the building is square.

For the purpose of the manual, we will assume that the slab is square, and the overall measurements are correct.

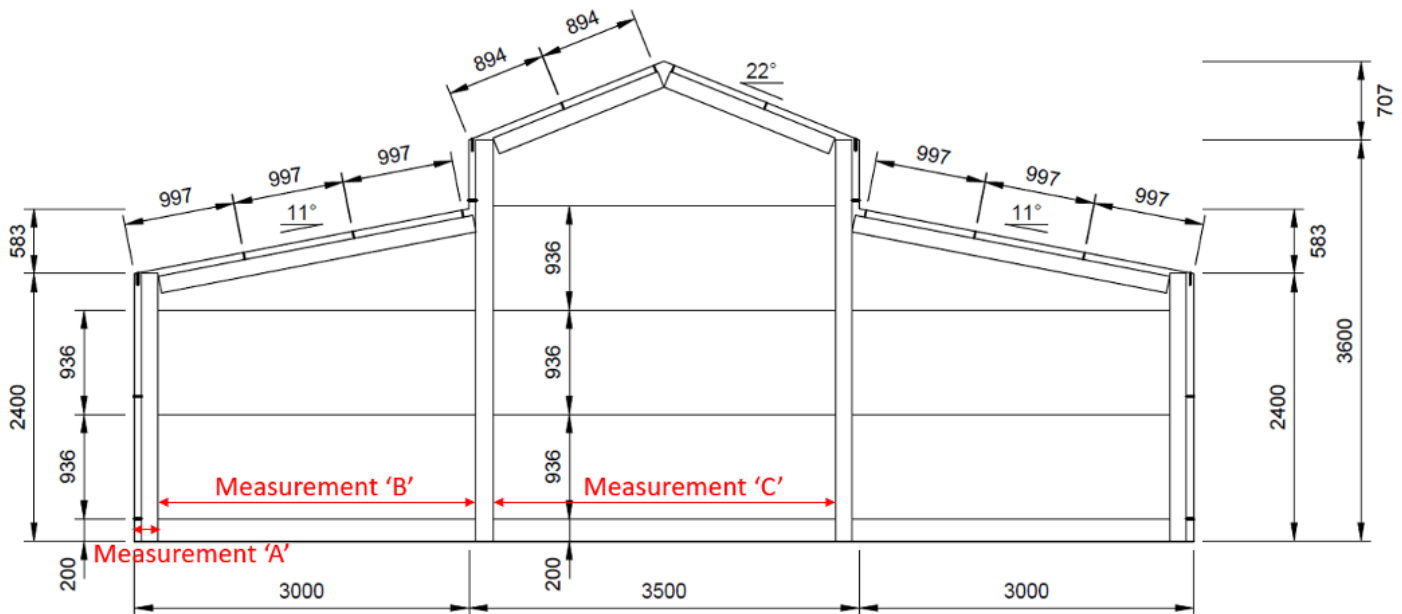


STEP ONE – MARKING OUT THE BUILDING ON THE SLAB



Before bringing any materials onto the foundation, it is best to firstly mark out for your column locations. We want to flick a chalk line marking the inside of the columns on both sides of the building. Later, when we stand our walls, we will use these chalk lines to ensure our walls are straight and in the correct location prior to fixing the walls to the foundations.

We will also mark out the internal portal frame column locations and flick these lines with the chalk line. To determine where to mark your chalk lines, we need to refer to your engineering drawings.



On your engineering drawings, you need to locate the page showing the end wall frame of the building. This drawing will show you the dimensions from the outside of the slab to the inside of the pelmet sheet.

Now for the outer wall columns you need to mark both sides of the concrete at a size that matches the column width (152mm for C150) plus the top hat girt purlin (64mm). So, the overall measurement is 216mm for a C150 shed from the edge of the slab in toward the center of the shed. (Measurement 'A')

Mark this dimension onto your foundation on all four corners of the building. Ensure you are measuring off the correct side of the foundation (side wall).

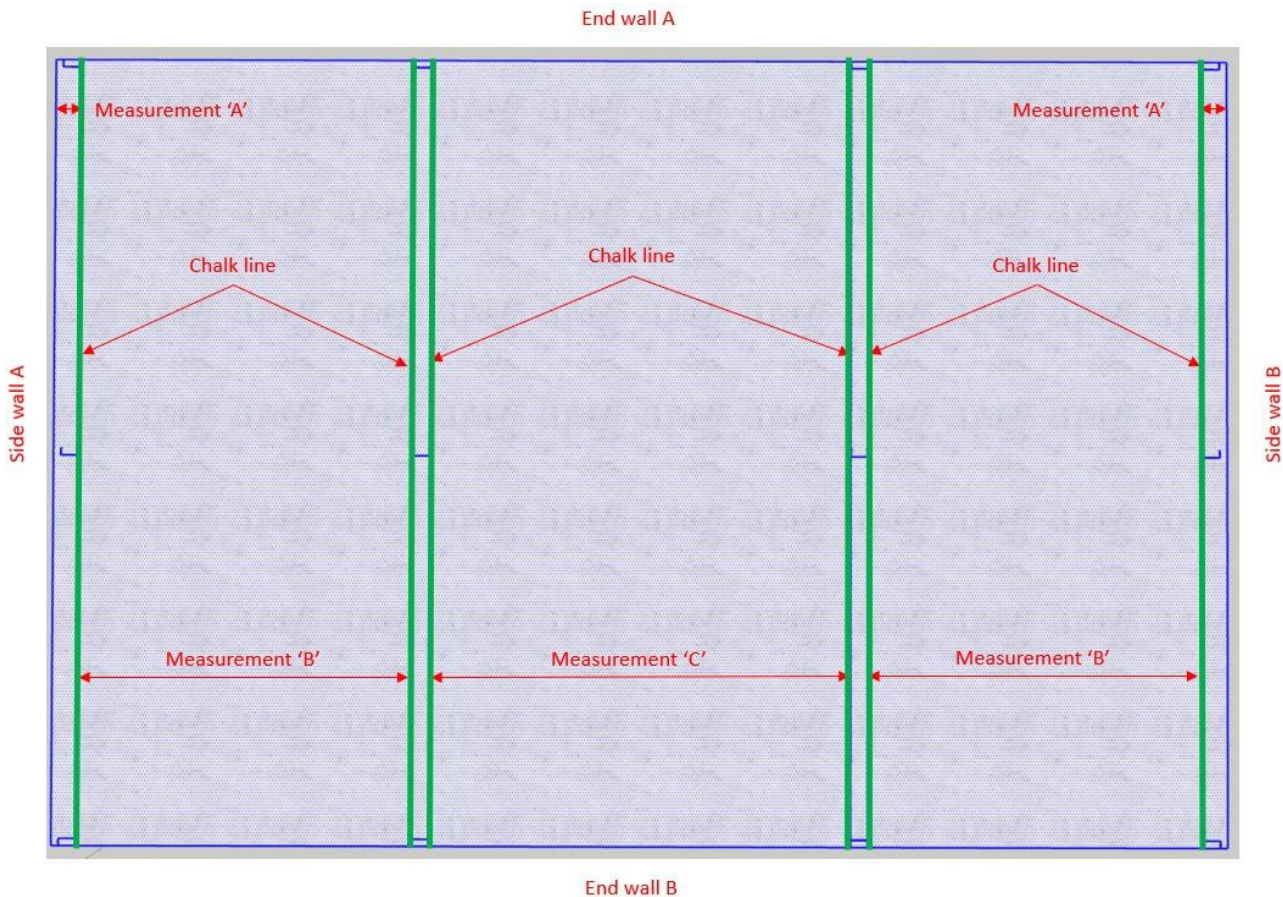
Now flick a chalk line between these marks, on both sides of the building.

Now measure from the line you have just made into the center of the shed as per the dimensions on your engineer plans and make a mark for the left- and right-hand side internal portal frame columns. (Note- As a helpful hint you can also measure back towards the outside of the shed 152mm and mark this for the inside of the C section). (Measurement 'B')

Now flick a chalk line between these marks, on both sides of the building.

Measure the distance between the two chalk lines and double check this measurement matches the engineering drawings. The measurement between the centre most two lines measurement will be used to make our rafters in step 3. This measurement will be known as our 'long point rafter length'. (Measurement 'C')

Now mark the 'frame overall dimension' down both side walls of your building (the gutter walls) and flick a chalk line at this location. This is the inside of the columns.



The distance between the lines (Measurement 'C') you have now marked is the long point to long point of the rafters, which you will need in step 3.

STEP TWO – UNPACK YOUR SHED KIT

Time now to unpack your shed kit, laying the materials out so that you can access various components of the kit as you need them throughout the build. Care must be taken when handling all components of the kit, sheeting and flashings are easily scratched if incorrectly handled. Extreme care must be taken when handling and storing roller doors. All coloured materials must be placed onto appropriate sponge type packaging to prevent any damage.

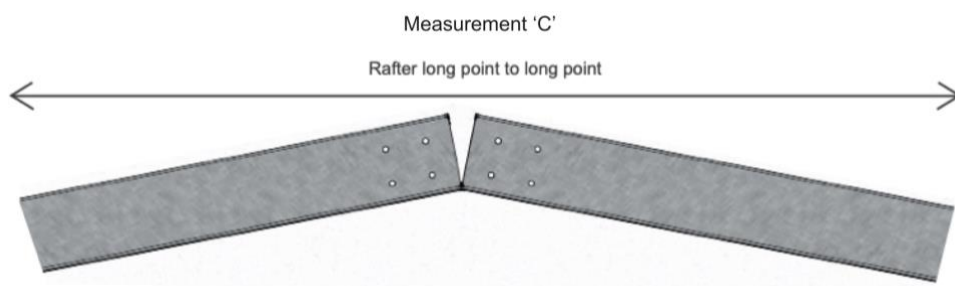
Do not ever sit or walk on your roller door. Always ensure there is thick packaging under the door preventing it being damaged from sharp objects on the ground like rocks.

When laying out your materials out be sure to consider the possibility of wind and it blowing away and damaging any loose items and also injuries.

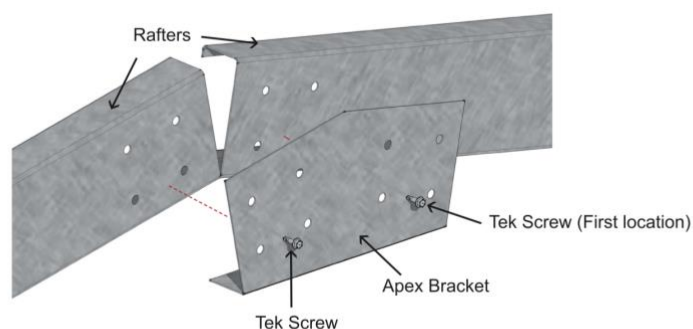
STEP THREE – ASSEMBLING RAFTERS

Lay 2 rafters out onto the slab with the bottom of the rafters touching at the apex. Using the apex bracket as a rough guide to set the pitch of the rafters. (Check the member schedule to see if your building has single or back to back rafters).

Now measure long point to long point of the rafters and adjust until the measurement is the same as in the previous step. (Measurement 'C')

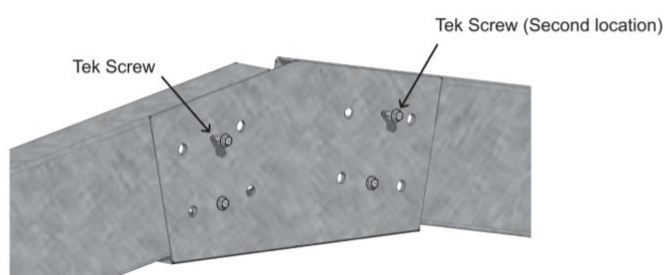


Put the apex bracket in place, check that all of the punching are in line and that the rafters are still touching. Put in 2 'tek' screws through the apex bracket into the rafters (1 screw per rafter) as shown below ('teks' screw first location).

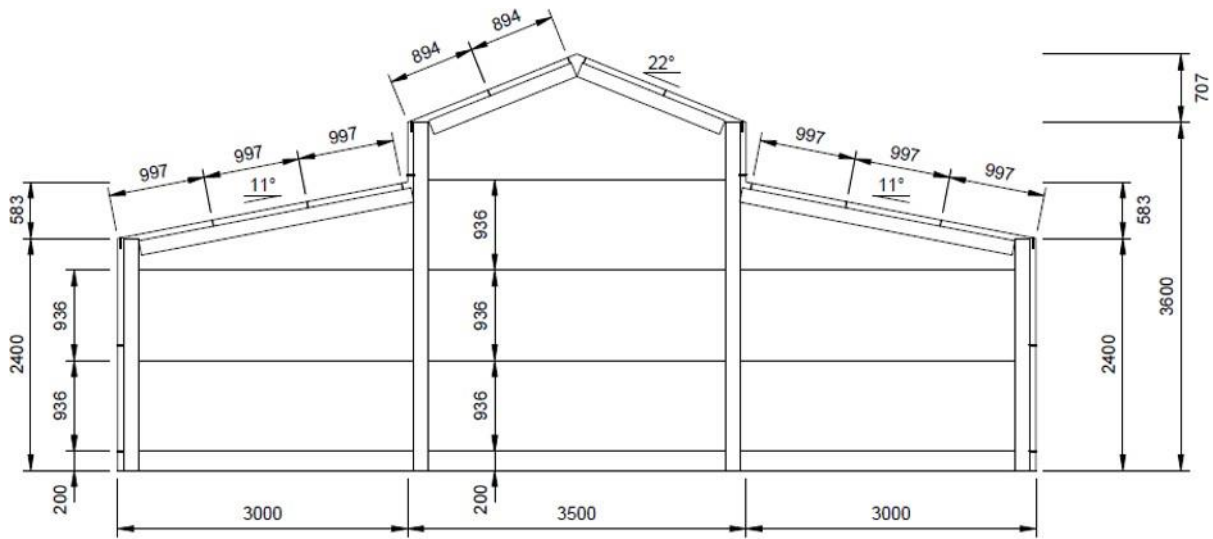


Put 2 more 'tek' screws through the apex bracket into the rafter ('tek' screw second location) to lock the rafters at the correct overall width and therefore correct pitch. Now put all bolts in as per engineering details.

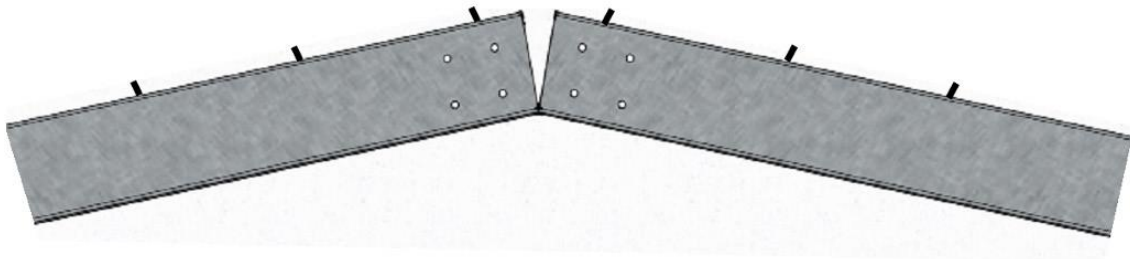
If apex brace are required in your building, bolt these to the rafters now in accordance with the engineering details.



TIP: Now is a good time to mark your roof purlins onto the rafters and lean-to rafters (to save doing it from a ladder later on in the build).



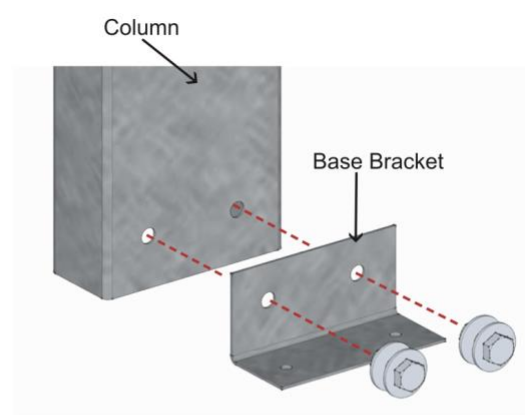
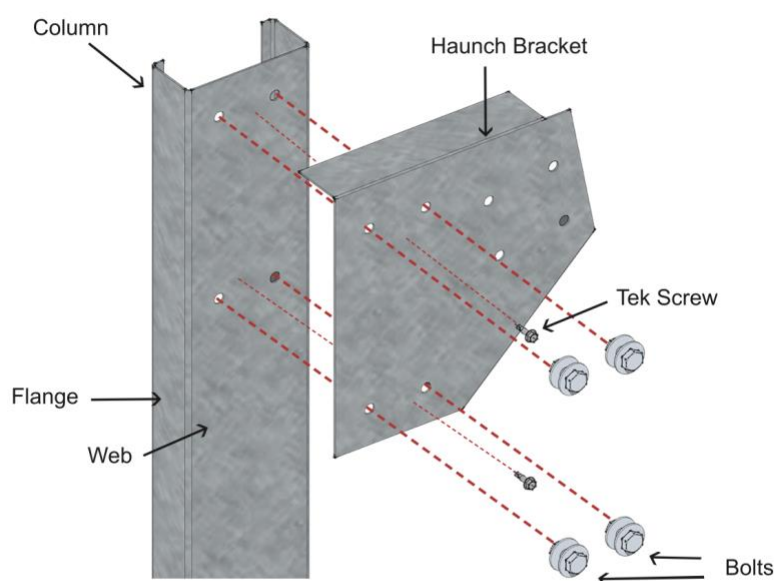
It's also a good idea to put a temporary screw in the rafter at the base of all purlins (The measurements on the engineering plans are to the centre of the top hat so the screws will need to be offset to suit the top hat sizes for your shed). Doing this prevents the purlins from sliding down the rafters while screwing them off. Roof purlin spacing can be found in the member schedule on your engineering plans.



STEP FOUR – COLUMNS, HAUNCH, BRACKETS, BASE BRACKETS, AND LEAN TO FLAT BRACKETS

Place the columns out on the slab, at approximate bay spacing's. Bolt the haunch bracket and base bracket onto the column in accordance with engineering details.

(Check the member schedule to see if your building has single or back to back columns)



Internal (tall) posts lean-to flat bracket connection

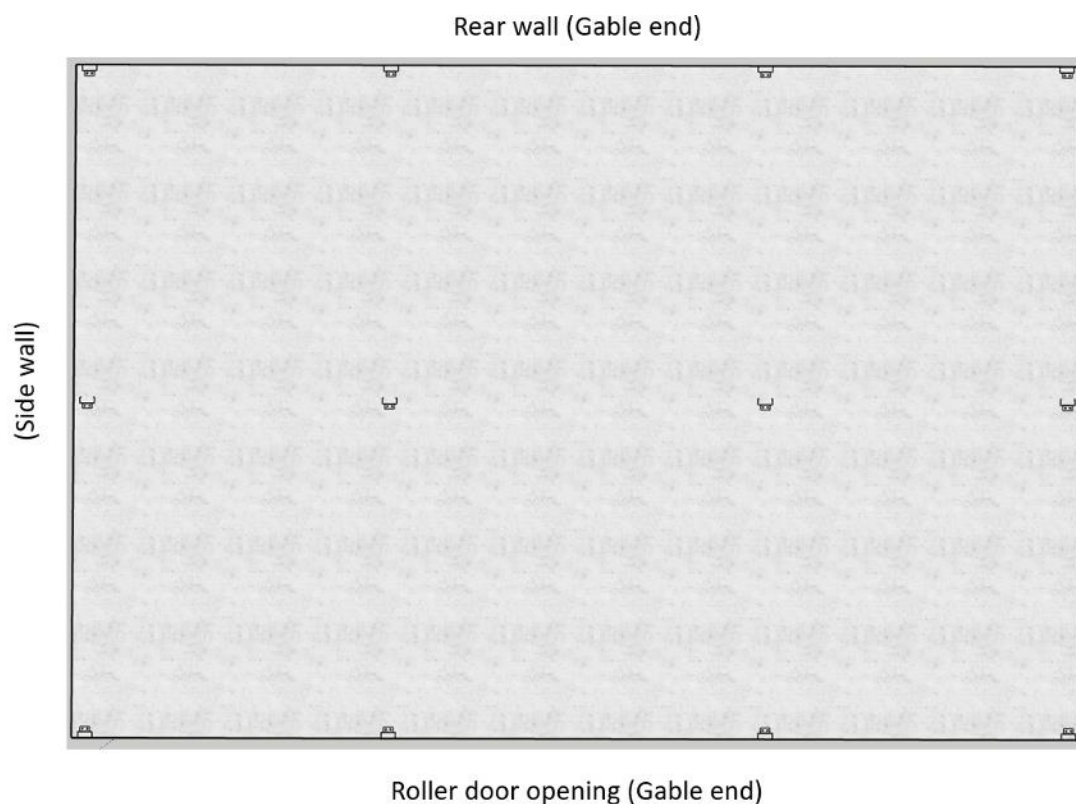
FLAT PLATE
CONNECTION
WITH 6 X TEK
SCREWS IN
COLUMN

This angle suits your
barns lean-to pitch (May
vary from 11° to 5° pitch
for the lean-to)

This measurement
can be found on
your engineering
plans, Note –
Cross check with
pelmet sheet
length

XXXX mm
TO TOP OF
CONCRETE
FOUNDATION

The end portal frames (front and back) need to have the webs (large flat face of the C section) of the C section facing into the building. This is so that a roller door may be attached to the column, and also for aesthetics. Unless open gable walls. Refer to floor plan. Intermediate portals can face either way, however for aesthetics the webs are generally faced towards roller doors opening side.

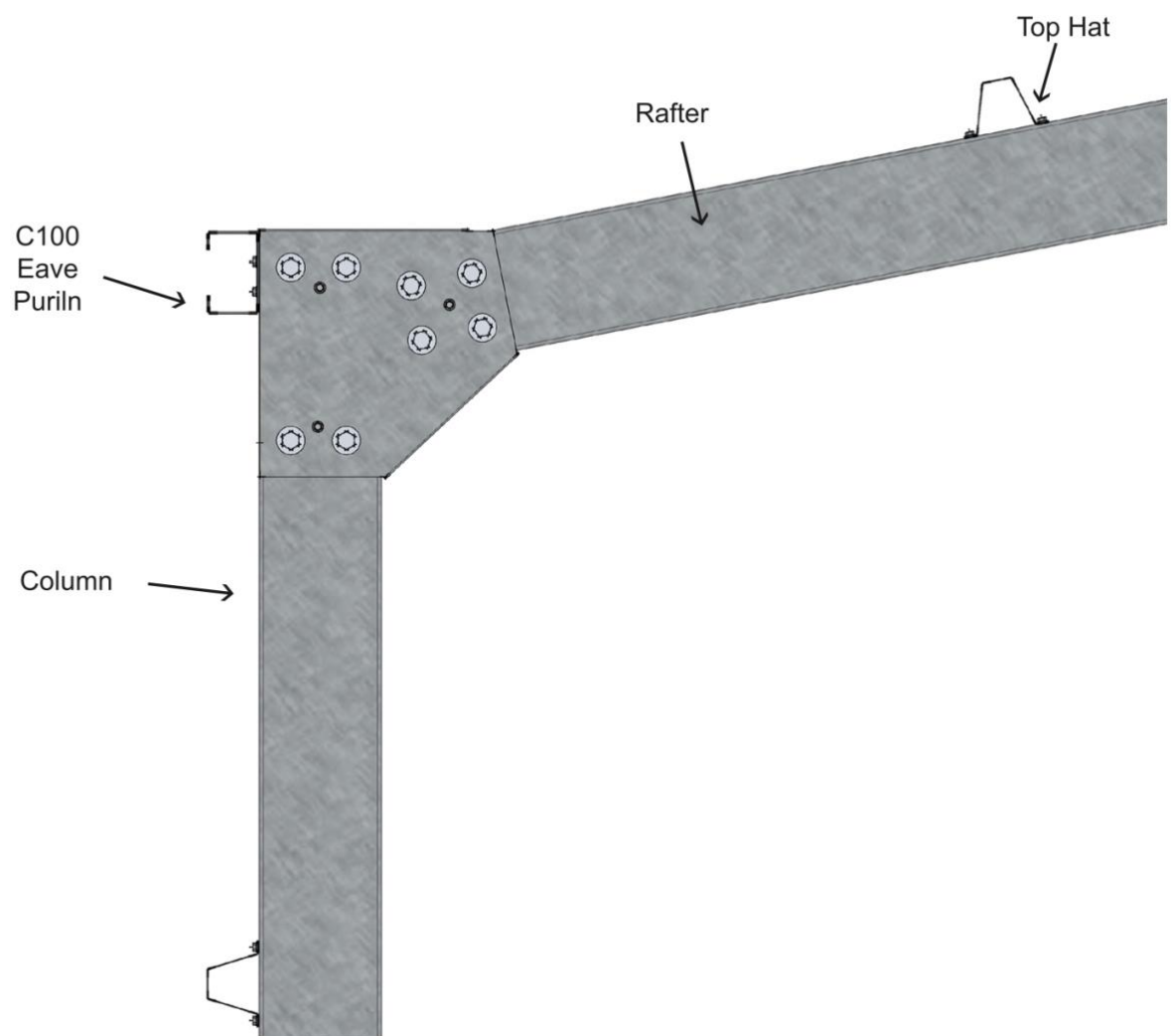


STEP 5 – ASSEMBLING OUTER WALL FRAMES

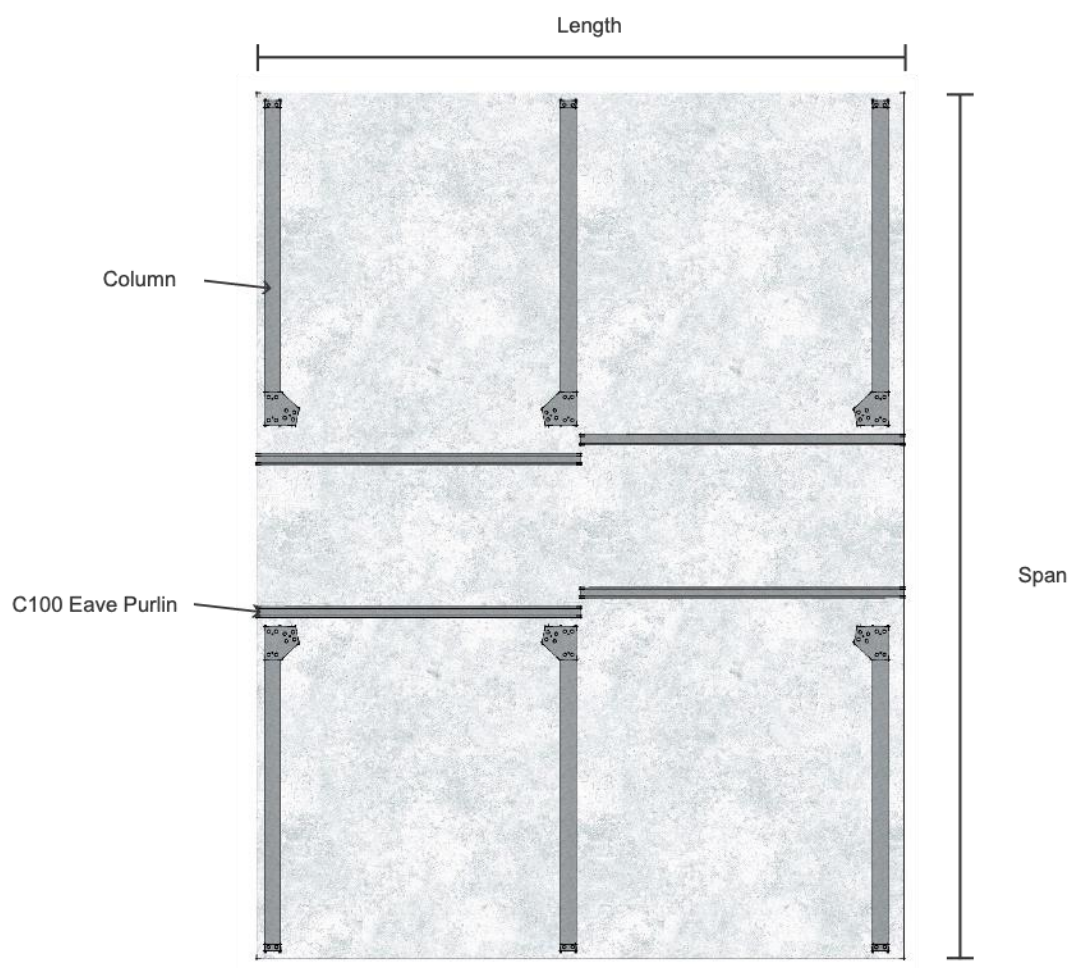
Assembling the wall frames varies slightly depending on the wall girt size of your building.
 If your girts are TH64XX then continue reading step 5.1
 If your wall girts are TH120XX then skip to step 5.2

Top hat 64mm Option

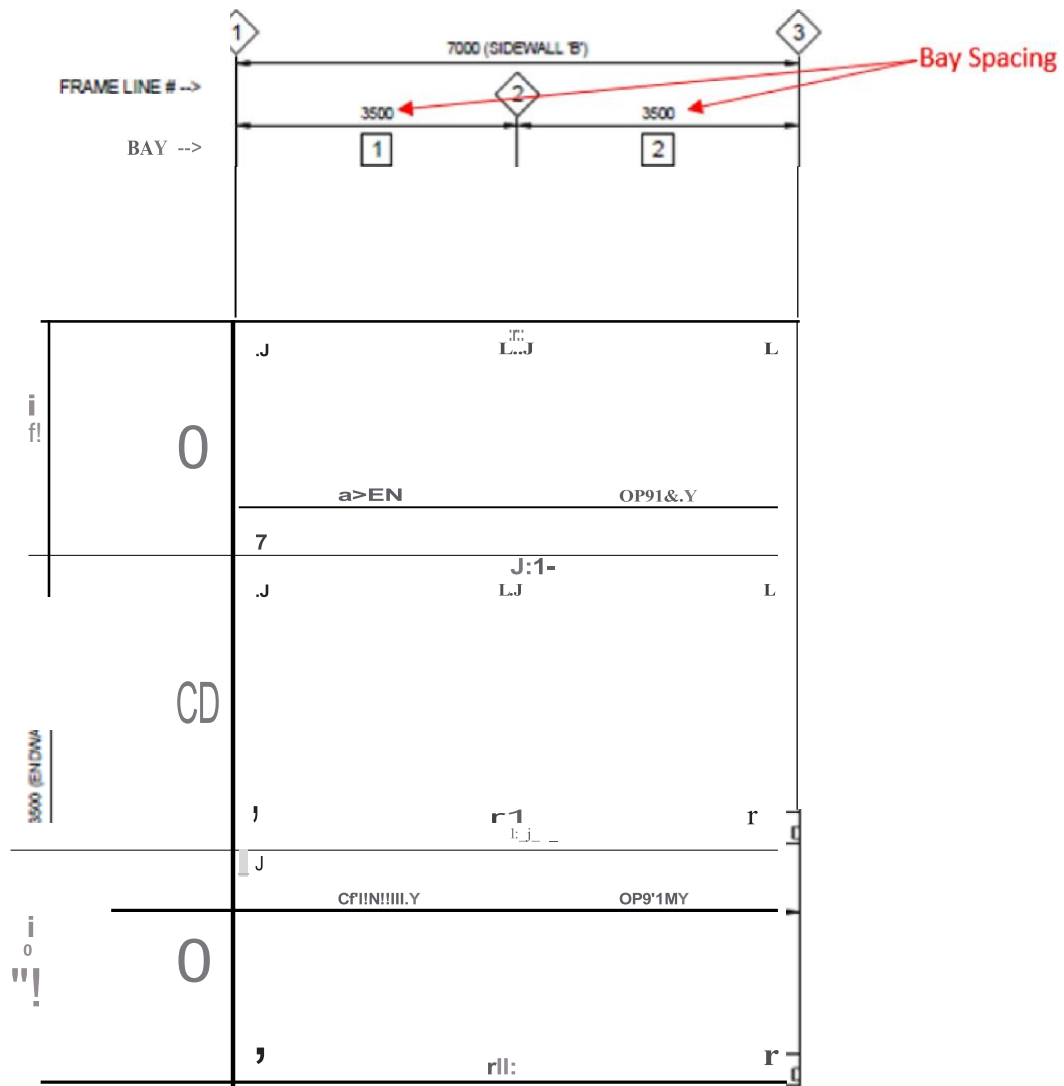
You need to attach the C100 eave purlin to the top of the columns. The C100 eave purlin will be flush to the top of the column. The C100 eave purlin is 64mm deep, making it the same dimension as the TH64 wall girts.



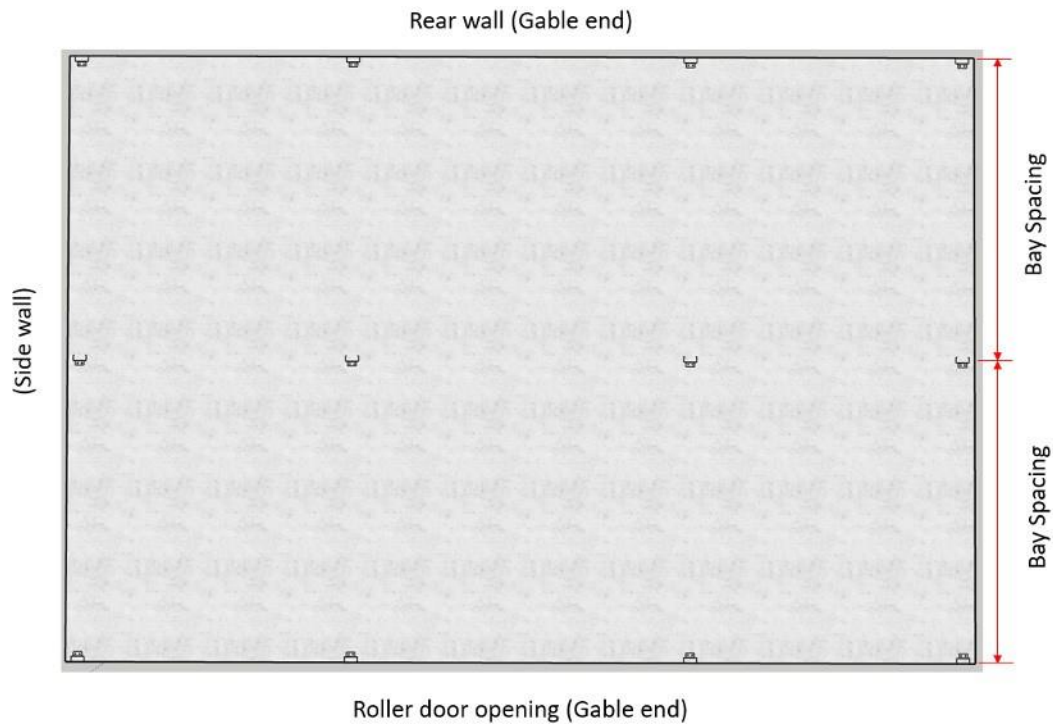
Your columns are already laid out on the slab, with the haunch and base brackets bolted on. Now lay out the C100 eave purlins down the centre of the slab.



Bay spacing needs to be determined to know the exact location of your columns (this will be as per your engineering plans bay sizes). The C100 eave purlin may need to be cut to be the same length as your bay spacing. Bay spacing on the front and back columns will run to the outside edge of the column.



On intermediate columns the bay spacing will be in the centre of the column.



Screw the C100 eave purlin flush to the top of the columns. The number of screws in accordance with engineering plans.

Mark the wall girt spacing onto the columns. The lowest girt is located 200mm from the bottom of the column to the top side of the wall girt.

The remaining girts are spaced evenly. Maximum wall girt spacing according to engineering details (member schedule).

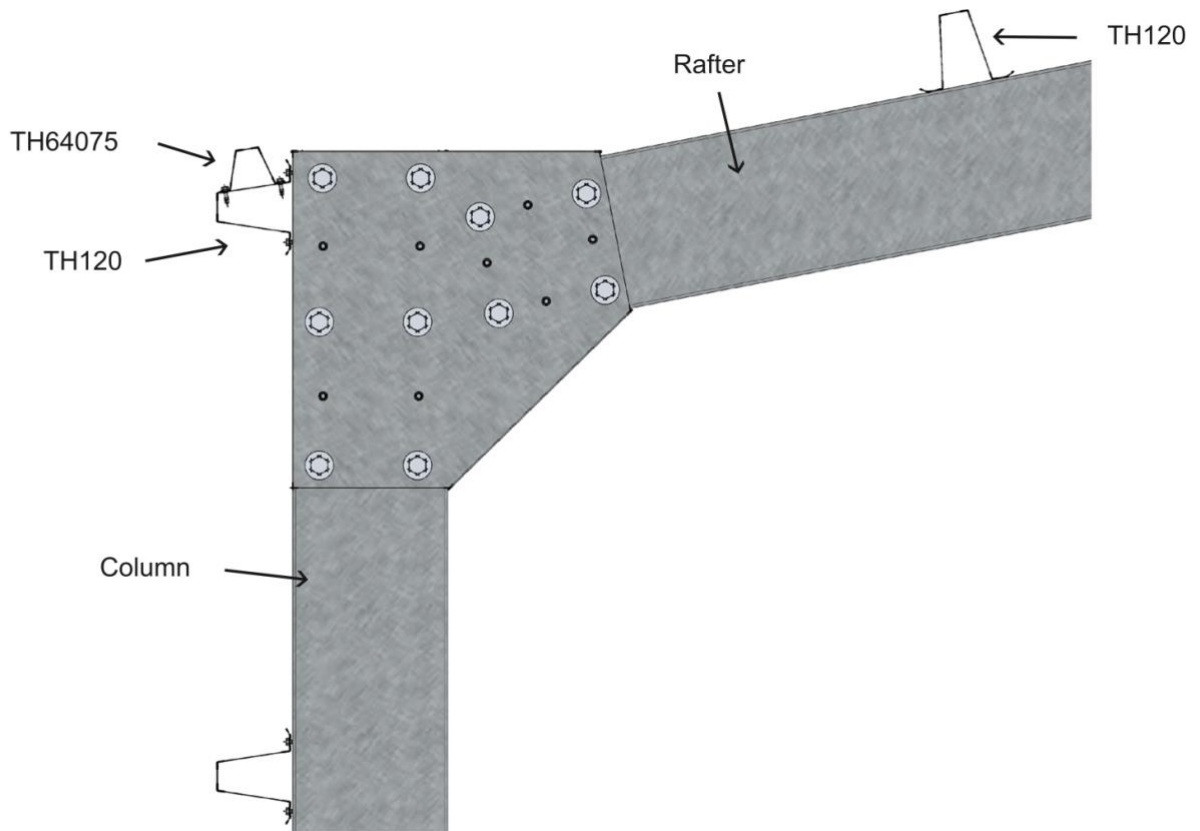
Now lay out the wall girts and screw them into place using one screw at each column connection point. Ensure that the columns are all parallel, and bay spacing measurements are as per engineering plans.

Run a string line at the base of all columns and check the wall frame is square (check diagonals). Now finish installing all frame screws at the wall girt to column connection in accordance with the engineering details.

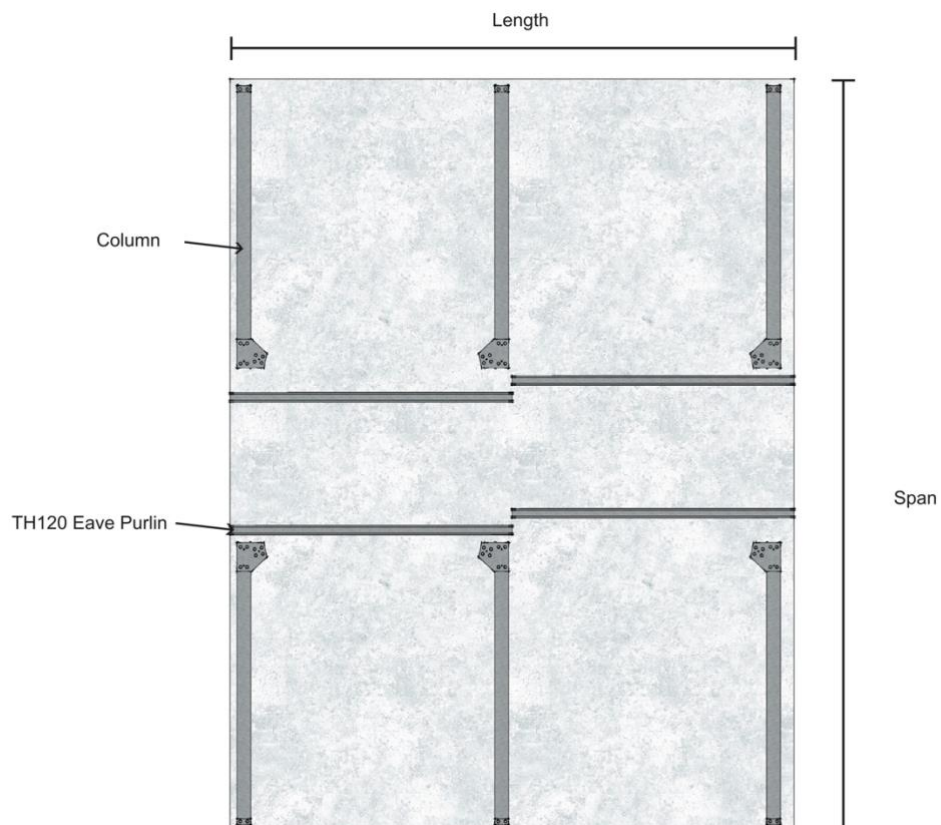
Check your engineering plans to see if any side wall strap bracing is required. If so, install strap bracing onto the wall frame.

Top hat 120mm Option

Now attach the TH120 eave purlin to the top of the columns. The TH120 eave purlin will be flush to the top of the column. A TH64075 is then attached on the top side of the TH120 eave purlin, in order to provide a fixing location for the end of the roof sheets.

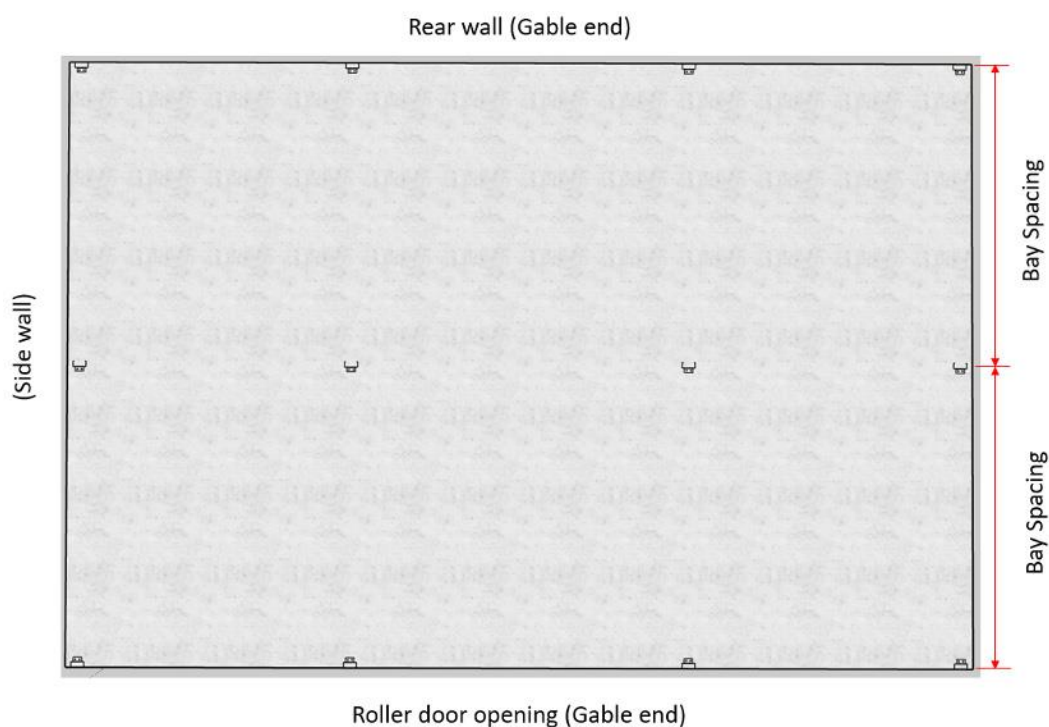


Your columns are already laid out on the slab with the haunch and base brackets bolted on. Now lay out the TH120 eave beams down the centre of the slab.



Bay spacing needs to be determined to know the exact location of your columns. Check your engineering plans to get your bay spacing. Bay spacing on the front and back columns will run to the outside edge of the column.

On intermediate columns the bay spacing will be in the centre of the column.



Screw the TH120 eave purlin flush to the top of the columns. The number of screws in accordance with engineering details.

Mark the wall girts spacing onto the columns. The lowest girt is located 200mm from the bottom of the column to the top side of the wall girt.

The remaining girts are spaced evenly. Maximum wall girts spacing according to engineering details (member schedule).

Now lay out the wall girts and screw them into place using one screw at each column connection point. Ensure that the columns are all parallel, and bay spacing measurements are as per engineering plans.

Run a string line at the base of all columns and check the wall frame is square (check diagonals). Now finish installing all frame screws at the wall girt to column connection in accordance with the engineering details.

Now screw the TH64075 into position on top of the TH120 eave purlin, as per engineering plans. Check your engineering plans to see if any side wall strap bracing is required. If so, install strap bracing onto the wall frame.

STEP SIX – STANDING THE WALLS

Before lifting the wall ensure you have the following ready to secure the frame to the foundations:

Dynabolts,
Hammer drill (with appropriate drill bit),
Hammer,
Socket (or Rattle Gun) and
Temporary Props, Bracing and Ropes.

Ensure the end columns are flush with the ends of the slab.

Appropriate tie down points, ropes and props are required to assist holding the wall vertical until you have all hold down bolts in and rafters secured in place. The larger the shed the more ropes and props you will need and in some instances mechanical lifting devices like a crane.

Ensure you have enough ropes and props to comfortably hold the wall against any wind that may occur.

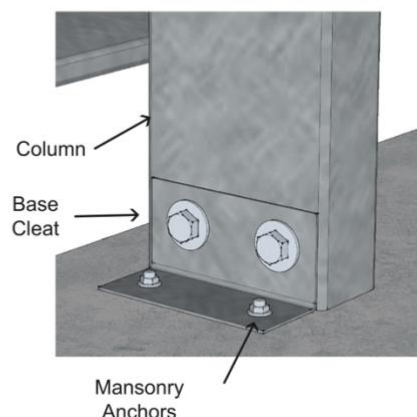
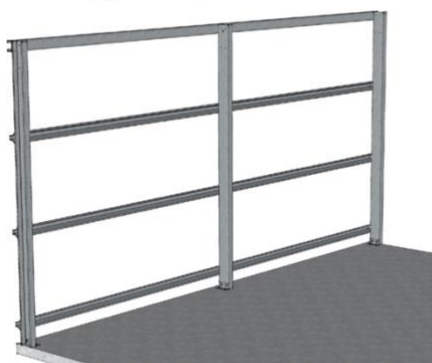
DO NOT ATTEMPT TO LIFT WALLS ON A WINDY DAY OR WHERE STRONG WINDS ARE PREDICTED.

Once you have all your ropes and props in position you can stand the wall. The size of the building will determine how many assistants, or the size of crane required to lift the wall. If using a crane, a spreader bar is required along with significant lengths of chain, so it does not damage any part of the wall when lifting.

Once one side wall is vertical and temporary ropes and props are secured, adjust the wall so that the first and last columns are flush to the concrete slab edge. Then move the inside flange of the columns to the line marked on the concrete slab back in step 1. Ensure the columns are aligned with the chalk line, (not twisted) and are plumb (adjust props if necessary).

Now drill appropriate size hole with a masonry bit (not included in kit) through the base bracket into the concrete (hold down/ Dynabolt size shown on the engineer's plan). Hammer in hold down bolts and tighten.

First Frame Standing (With no gutter side wall roller doors)



Now we need to build and stand the internal/centre wall that matches the standing side wall. This is done much the same as the side wall...

Your columns can be laid out on the slab, with the haunch, lean-to flat bracket and base brackets bolted/ screwed on. Now lay out the C100 eave purlins down the centre of the slab.

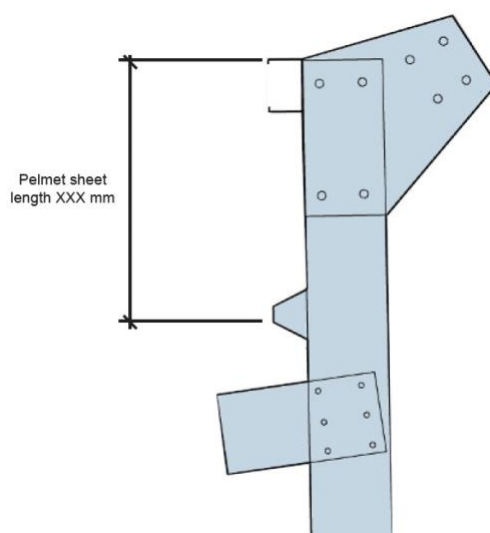
Bay spacing needs to be determined to know the exact location of your columns (this will be as per your engineering plans bay sizes). The C100 eave purlin may need to be cut to be the same length as your bay spacing. Bay spacing on the front and back columns will run to the outside edge of the column.

On intermediate columns the bay spacing will be in the centre of the column unless shown other on the engineering plans.

Screw the C100 eave purlin flush to the top of the columns. The number of screws in accordance with engineering details.

Mark the wall girts spacing onto the columns. A temporary wall girt will be required to help with standing and bracing the wall square etc until the wall posts are fixed/bolted down to the concrete, this will be placed 400mm from the bottom of the column to the top side of the wall girt.

The remaining girts are to be placed to suit the pelmet wall sheets length. Check your bill of materials or your actual pelmet sheets length and place the top hat down from the C100 eave purlin so the bottom flat profile of the top hat matches the pelmet sheet.



Now lay out the wall girts and screw them into place using one screw at each column connection point. Ensure that the columns are all parallel, and bay spacing measurements are as per engineering plans.

Run a string line at the base of all columns and check the wall frame is square (check diagonals). Now finish installing all frame screws at the wall girt to column connection in accordance with the engineering details.

STEP SEVEN – INSTALLING LEAN TO RAFTERS

The size of your building will determine whether you need a crane to lift rafters into place, and also whether you need scissor lift/s, mobile scaffolding to install rafters, roof battens, roof sheeting etc. Follow OHS (Occupational Health & Safety) guidelines for working safely on site, in particular working at heights.

Starting at the back wall of the building, carefully lift the previously assembled lean-to rafter up onto haunch bracket and lean-to flat bracket that are already bolted/screwed onto columns. Use a clamp to hold the rafter in position.

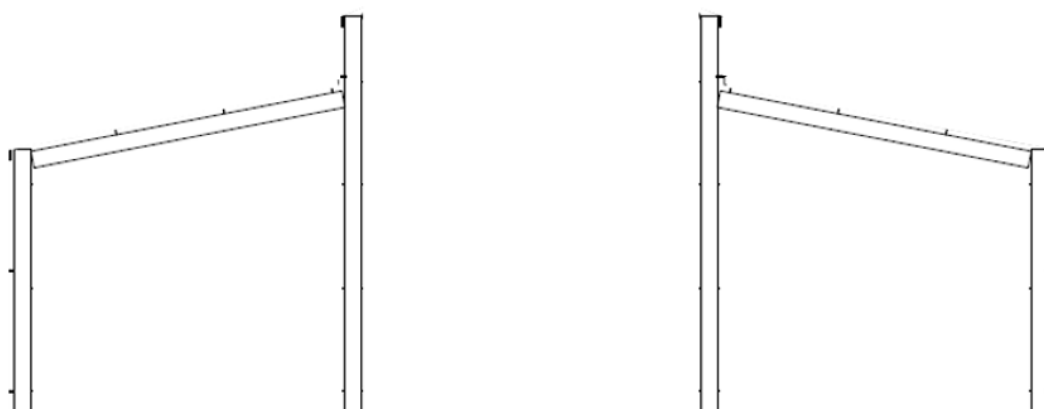
Align bolt holes in the rafter and the haunch bracket and put 1 x temporary 'tek' screw through the haunch bracket into the rafter also line up the top end of the lean-to rafter tight against the column and even on the flat bracket and lean-to rafter and put 1 x temporary 'tek' screw through the lean-to haunch bracket and rafter.

Now install all frame bolts to engineer's details. Only do them up finger tight for the moment.

Using a spirit level, re-check the plumb of the 2 columns that the rafter has just been attached to. Adjust props / ropes as necessary. Now tighten the haunch bracket to rafter frame bolts and add all frame screws into the lean-to rafter/lean-to rafter flat bracket.

Repeat above steps for all lean-to rafters.

Also repeat all above steps for other side walls and lean-to rafters. This is how your shed should look from the front and rear view.



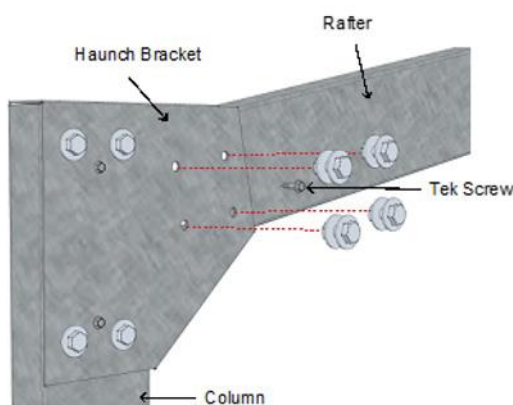
STEP EIGHT – INSTALLING CENTER RAFTERS

The size of your building will determine whether you need a crane to lift rafters into place, and also whether you need scissor lift/s, mobile scaffolding to install rafters, roof battens, roof sheeting etc. Follow OHS (Occupational Health & Safety) guidelines for working safely on site, in particular working at heights.

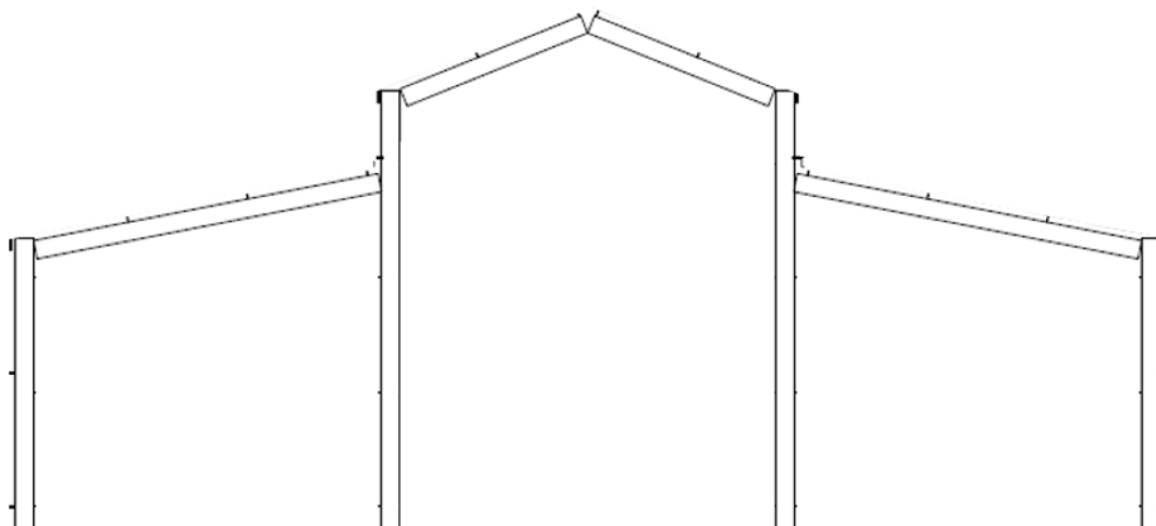
Starting at the back wall of the building, carefully lift the previously assembled rafters (step 2) up onto haunch brackets that are already bolted onto columns (step 3). Use a clamp to hold the rafter in position.

Align bolt holes and put 1 x temporary 'tek' screw through the haunch bracket into the rafter on each side of the building.

Now install all frame bolts to engineer's details. These can be tightened up.



This is how your shed should look from the front and rear view.



STEP NINE – INSTALLING END WALL MULLION (IF REQUIRED)

Check your engineering plans for spacing and number of end wall mullions.

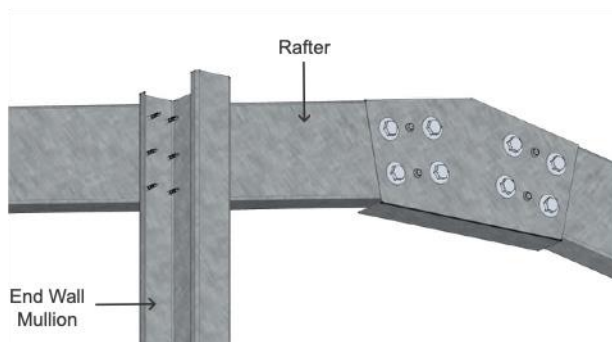
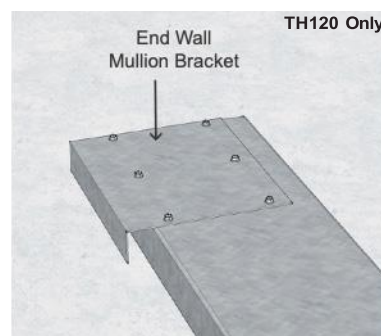
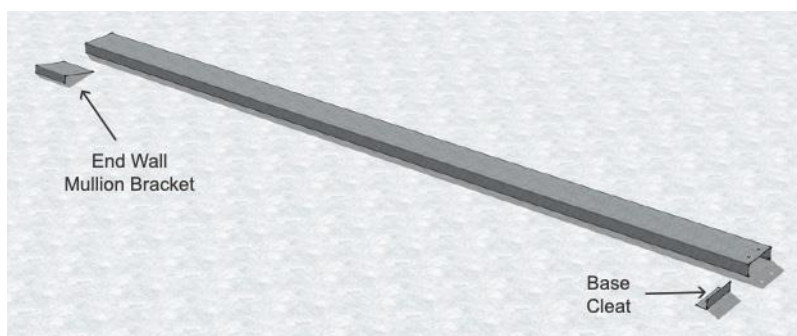
Mark out end wall mullion positions onto the slab. End wall Mullions will be perpendicular to the rafters. End wall mullions can face either way, for aesthetics face the flat face (web) of the C section towards any side wall openings.

Depending on your building span you might have,

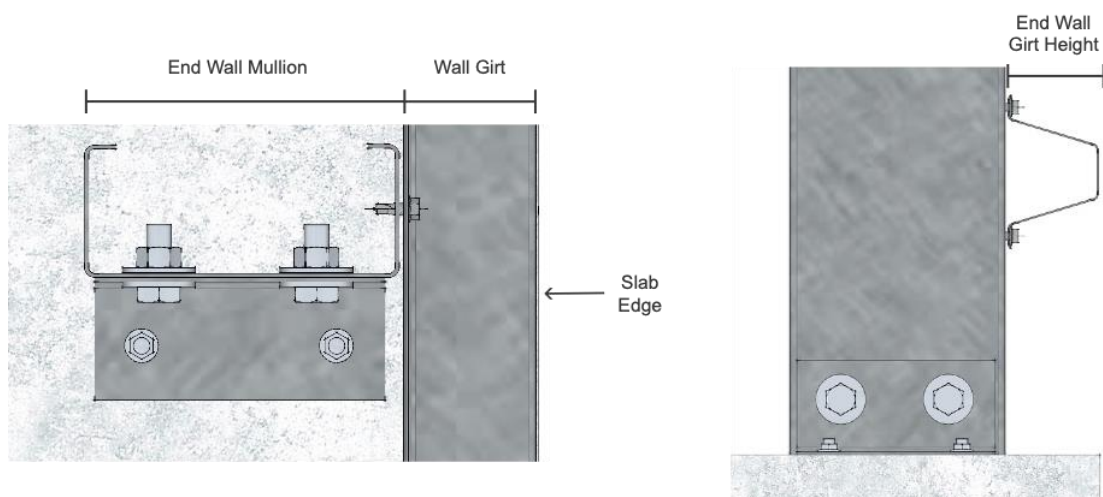
No end wall mullions

One end wall mullion in each end wall, this will be right in the centre on the apex bracket. This option may require apex bracket bolts being removed and drilled through the mullion (on Top hat 120 option)

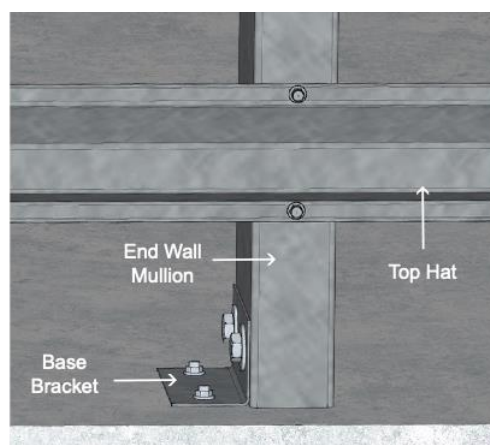
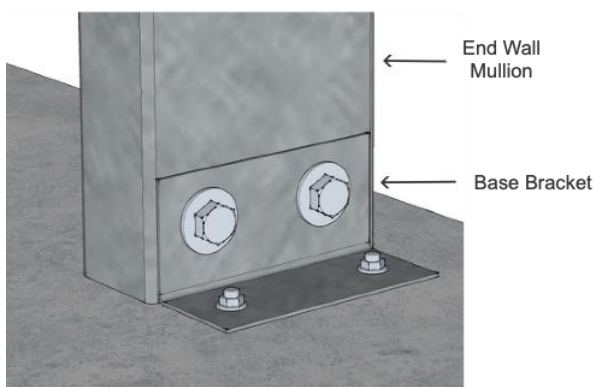
Two or more end wall mullions in each end wall, in this case mullions will be located along each rafter



End wall mullions are offset end wall girt thickness from the slab edge (Check end wall girt size from engineer's plans).



Locate your end wall mullions and bolt the base brackets on to pre-punched holes (to engineer's drawings).



Stand end wall mullion in position and roughly plumb. Check height of mullion to the top of the rafters and if necessary, mark and cut the mullion to ensure it will not interfere with roof sheeting.

Check your end wall girt size (same as start of step 4) and determine whether you have 64mm or 120mm end wall girts.

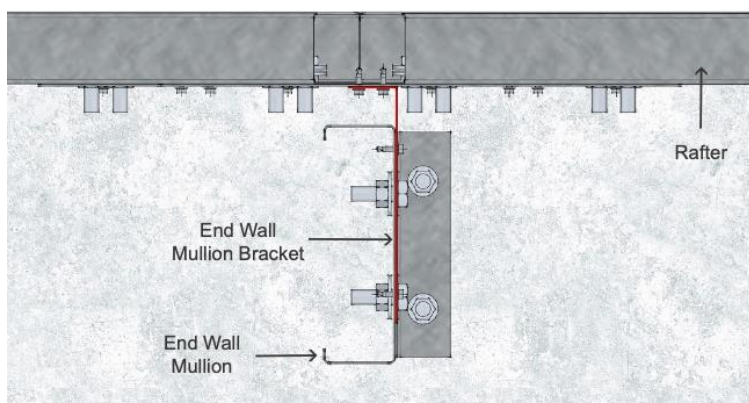
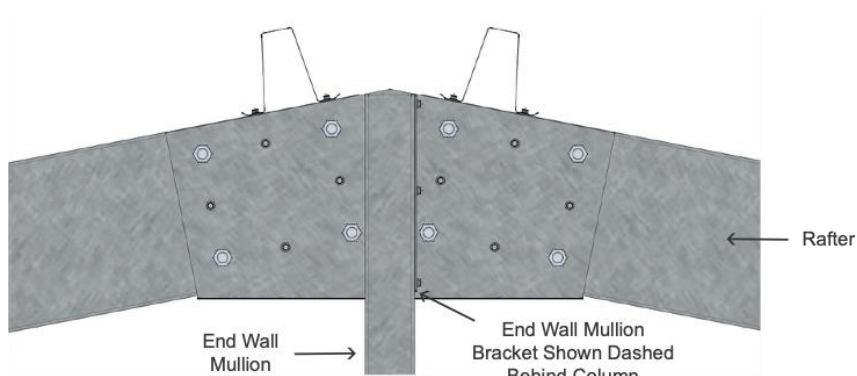
For 64mm end wall girts follow next step (Step 9.1) for 120mm end wall girts go to Step 9.2

9.1 - Top hat 64mm end wall girt option

If you have 64mm end wall girts, there is no end wall mullion bracket supplied to attach the mullion to the rafter. Instead you just screw through the rafter into the mullion, or alternatively screw through the apex bracket into the mullion. No bracket is needed as the rafter and column flange thickness is the same thickness as end wall girts (64mm).

9.2. - Top hat 120mm end wall girt option

If you have 120mm end wall girts, there is an angle bracket which is called an end wall mullion bracket which will attach the end wall mullion to the rafters. The bracket is needed as the 120mm top hat is larger than the flange size of the columns and rafters.



Note: It may be necessary to prop and rope the mullion to hold it plumb, and to ensure it has enough strength to brace all the rafters when in place.

STEP TEN – INSTALLING REMAINING RAFTERS

Install all remaining rafters as in Step 7.

Be sure to brace all rafters before removing any lifting devices. A good way to do this is to run 2 rows of roof purlins (one each side of the roof up near the apex) back to the first rafter you installed that has mullions in place, and use ropes and props to hold everything steady. Ensure all rafters are parallel and plumb.

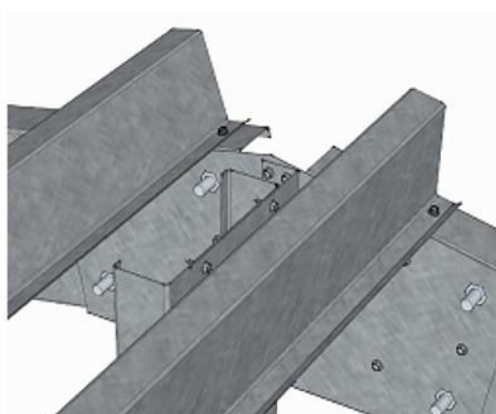
On large buildings where the frame size is greater than C150, it will be necessary to install all the purlins in the first bay and install the roof bracing to hold the heavier rafters in place.

STEP ELEVEN - FIXING ROOF PURLINS

Lay out the roof purlins onto the rafters, using the temporary screws previously installed that are in place from a previous step. First and last bay roof purlins should be installed flush with the outer face of the rafters on the end wall.

Fix into position with one screw per connection initially to hold purlins in place. Ensure that all end walls and all intermediate rafters are plumb before the roof purlins are fully fixed in place in accordance with the engineering plans.

Ensure that the spacing between the rafters is the same as the spacing between the columns. If roof bracing is required, fix into position as per the engineering plans prior to sheeting the roof.



STEP TWELVE – END WALLS ROLLER/S COLUMNS

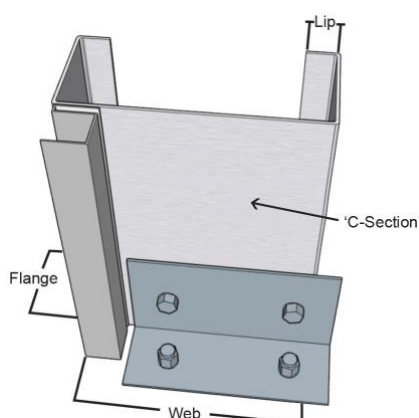
Refer to your engineering plans for end wall roller door locations. If there are no end wall roller doors in your building then continue to step 14.

End roller doors are supplied with 'C Section' roller door columns to frame the opening, or alternatively are fixed on the existing end wall columns or rotated end wall mullions (to create greater opening widths)


- refer to your engineering plans to determine what is applicable for your building. Detailed instructions for installing your roller door are supplied in the roller door bracket box.

The width of roller door frame openings will be narrower than the actual door (curtain) width by either 50mm or 100mm depending on door track size. Check your roller door instructions for correct opening size.

Mark out the position of roller door columns on to the concrete slab. Locate your roller door columns and bolt the base brackets as per engineer's drawings.



Stand roller door column/s in position and plumb column. Mark the top and bottom of the rafter onto the roller door column and notch the column as. Stand the roller door column back up in position, fix it to the concrete with masonry anchors. Now plumb the column and screw/bolt to rafter as per engineer's plans.

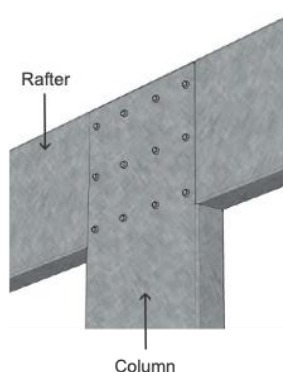
 **Tip:** Spray paint all cuts with Cold Gal spray paint, to prevent any corrosion.



Roller Door Column or
Rotated Mullion
Before Notched Out



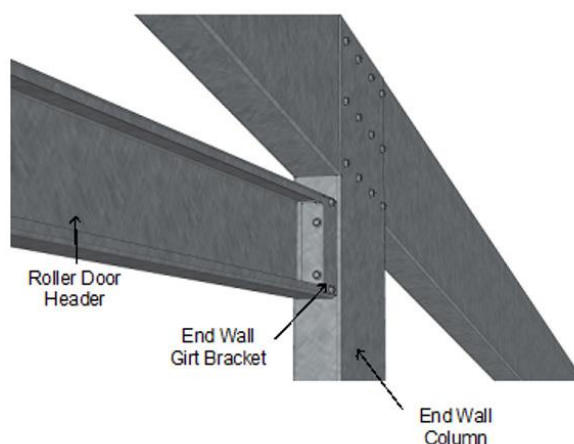
Roller Door Column
or Rotated Mullion
After Notched Out



STEP THIRTEEN – END WALL ROLLER/S HEADERS

Roller Door header installation heights are generally located on your engineering plans.

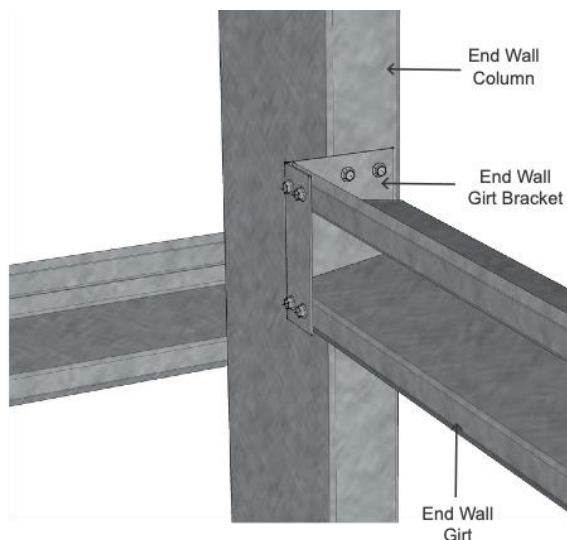
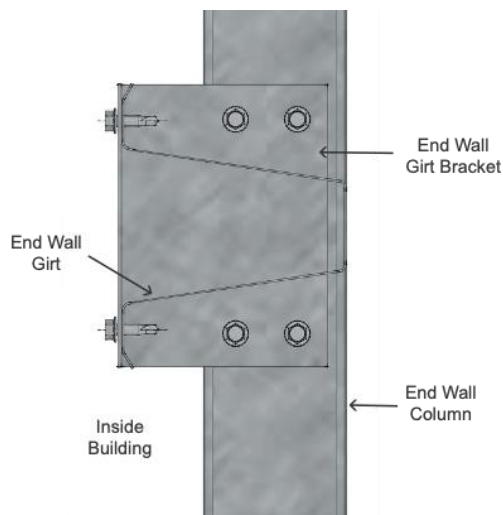
Mark the opening height up both columns and attach end wall girt bracket (which you will attach the roller door header to). Screw header beam into place, ensuring the beam is level across the opening.



STEP FOURTEEN – END WALL GIRT

Install End Wall Girt brackets on the inside of End Wall Columns and Gable End Roller door Posts (only if you have end wall roller doors). End Wall Girts spacing as per engineer's plans.

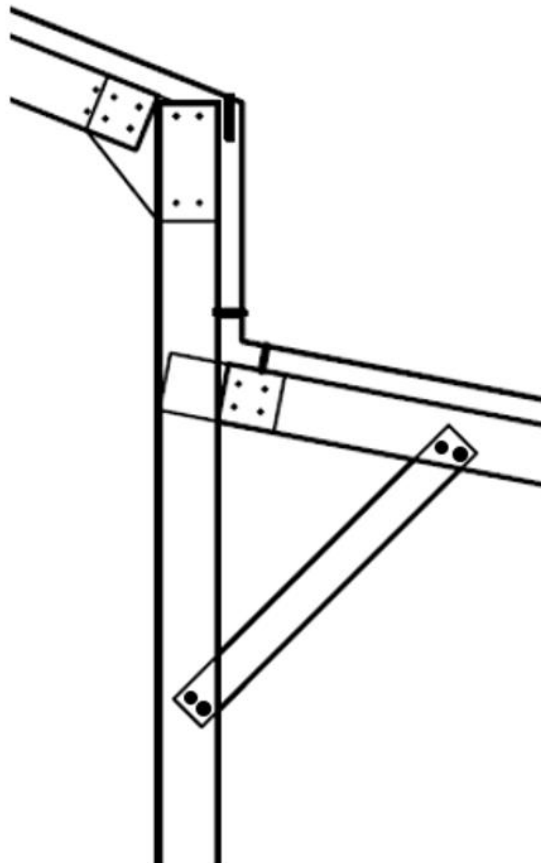
NOTE: 120mm top hat size shown in diagram below, 64mm top hat brackets will fit flush with the web of the post



STEP FIFTEEN – FIXING KNEE AND APEX BRACES (IF REQUIRED)

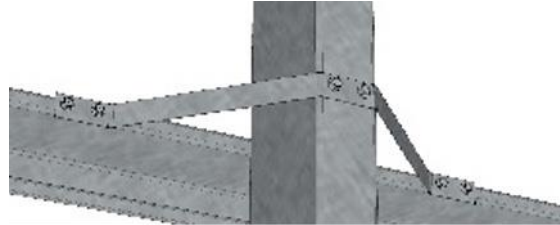
Install knee and apex braces (if required) as per engineer's plans using the correct number of bolts and screws at each end of the knee/apex brace. Where required, Knee and Apex Braces are critical elements and must be installed as per engineering details.

This will require the flanges of the Knee and Apex Braces to be cut away where these contact the Columns and Rafters - as per below drawing. (Especially so for Back to Back frames.)



STEP SIXTEEN – FIXING FLY BRACING (IF REQUIRED)

Please check and install fly bracing if required, as per your engineering plans.



STEP SEVENTEEN – SIDE WALL ROLLER DOORS (IF REQUIRED)

Refer to your engineering plans for side wall roller door locations. If there are no side wall roller doors in your building then continue to step 18.

Side roller doors are supplied with 'Z Section' roller door columns to frame the opening. Detailed instructions for installing your roller door are supplied in the roller door bracket box.

The width of roller door frame openings will be narrower than the actual door (curtain) width by either 50mm or 100mm depending on door track size. Check your roller door instructions for correct Opening size.

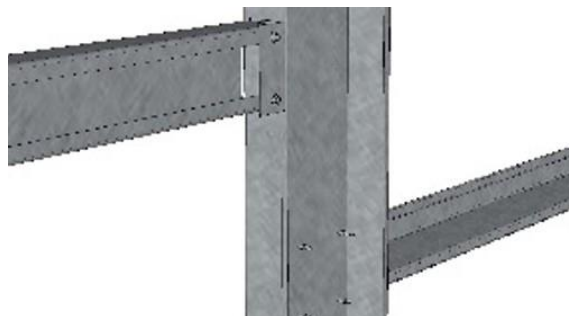
Mark out the position of roller door columns onto the concrete slab.

Plumb these lines up onto the wall girts and cut the wall girts at this location.

Locate your roller door columns 'Z Section' and bolt the base brackets (to engineer's drawings).

Stand roller door column/s in position and plumb column. Mark the top and bottom of the eave purlin onto the roller door column and notch the 'Z section' column around the eave purlin.

Stand the roller door column back up in position, fix it to the concrete with masonry anchors. Now plumb the column and screw/bolt to rafter as per engineer's plans.



Tip: spray all cuts with Cold Gal, to prevent any corrosion

STEP EIGHTEEN – PA (PERSONAL ACCESS) DOORS (IF REQUIRED)


All PA door jambs (to suit 64mm or 120mm wall girt) are supplied 2.7m long. On all buildings with an eave height 2.7m or less, the jamb will attach to the eave purlin. In all other cases it will attach to the next wall girt above the door head. Check plans for door location.

Measure the opening required for your door, and mark this onto the concrete slab. Plumb these marks up onto the wall girts, and cut the wall girts.

Locate your PA door jambs and screw on the base brackets (to engineer's drawings). Stand PA door jambs in position and plumb. Mark the top and bottom of the eave purlin (or wall girt) onto the PA door jambs and notch the jamb around the eave purlin (wall girt).

Stand the PA door jambs back up in position, fix it to the concrete with masonry anchors.

Now plumb the column and screw to eave purlin (wall girt) as per engineer's plans. Screw all wall girts to the jamb. Ensure girts remain level.

 **Tip:** mark the opening 5-10mm larger than required opening to allow for inaccuracy when cutting wall girts.



STEP NINETEEN – WINDOWS (IF REQUIRED)

Best Sheds windows are 2 corrugated sheets wide.

It's best to mark the approximate position of the window on the face of the wall girts. Then start wall sheeting and when you come to your marks, adjust them to suit the wall sheeting (this saves having to cut the sheeting down the sides of the windows).

Sit the window on the wall girt, with the bottom fin of the window running down the face of the wall girt. Now slide the window along so the side fin of the window goes behind the wall sheet already in place.

Screw the window to the wall girts, and place a screw through the wall sheeting into the top fin of the window.

Now measure and cut sheets above and below the window and screw them into place. Continue wall sheeting.



STEP TWENTY – SIDE WALL SHEETING

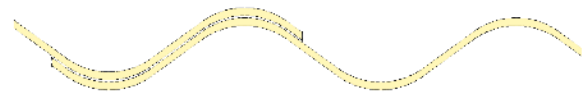
Locate the side wall sheeting, sheets will be approximately 20mm longer than column length (this allows the sheets to overlap the concrete slab).

Top of side wall sheets will be flush with top of Eave Purlins.

Check to see if insulation is supplied for your walls. If so cut insulation to length and install as you are installing the wall sheets.

If there are any openings in the side walls, cut sheets as required to match frame opening already installed.

Check each sheet is plumb before screwing off. Screw pattern as per engineering plans.



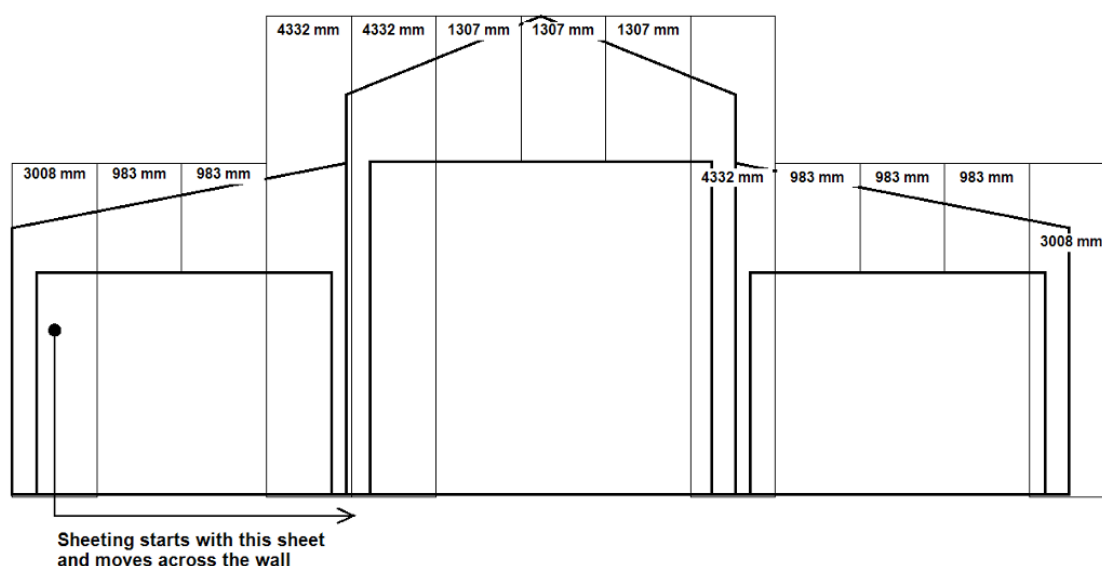
Overlap Detail

STEP TWENTY ONE – END WALL SHEETING

Locate the end wall sheeting. End wall sheets are all one length (longest length required), and will need to be cut to the rake of the roof onsite. (Image below shows approximate lengths that the sheeting will initially need to be cut down to, then cut the rake once square sheets are installed).

Sheets will overlap slab same length as side wall sheeting Top of end wall sheets are to be cut to underside of roof sheeting.

If there are any openings in the end walls, cut sheets as required to match frame opening already installed. Check each sheet is plumb before screwing off.



STEP TWENTY TWO – GUTTERS

Work out how many and the location of your downpipes. Number of downpipes is provided on your material list.

Cut the downpipe nozzles out of the gutters (to suit above) and install nozzle. Ensure you place silicone on all rivets, and where the nozzle meets the gutter.

Install stop ends on the appropriate gutters. Again, ensure you use plenty of silicone, and make sure you strip the protective plastic back off the guttering and stop ends.

Now need to mark a the fall of the gutters with a chalk line onto the wall sheeting, one end (high end) starting at the top of wall sheeting, and the other end where the downpipe is (low end) having a minimum fall of 1:500.

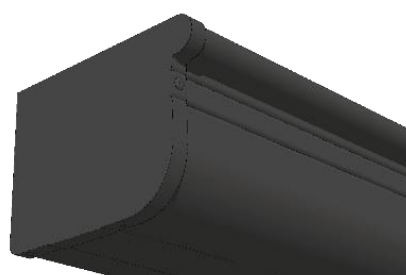
E.g. A 7.0m long gutter must drop 1mm every 500mm, $7000\text{mm} / 500 = 14$ Building minimum fall= 14mm

Gutter brackets are now to be installed to the wall sheeting at maximum 1.2m spacing's. Rivet gutter brackets to the ridge of the wall sheeting, aligned with the chalk line indicating the required fall.

Hook the gutter onto the end of the gutter bracket and rotate into place. Ensure you place silicone on all gutter joins and lap the gutters in the direction of the fall of the roof.



Guttering Overlap



Gutter End

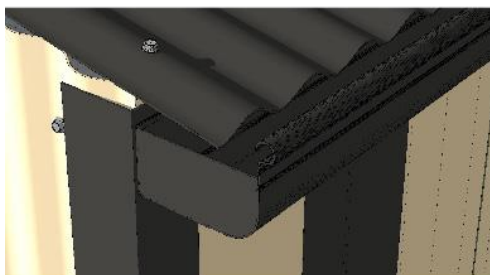
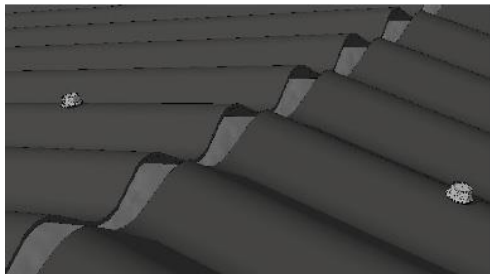
STEP TWENTY THREE – LEAN TO ROOF SHEETING

Check engineer's plans for any strap bracing required in the roof frame and ensure all bracing is installed as per plans.

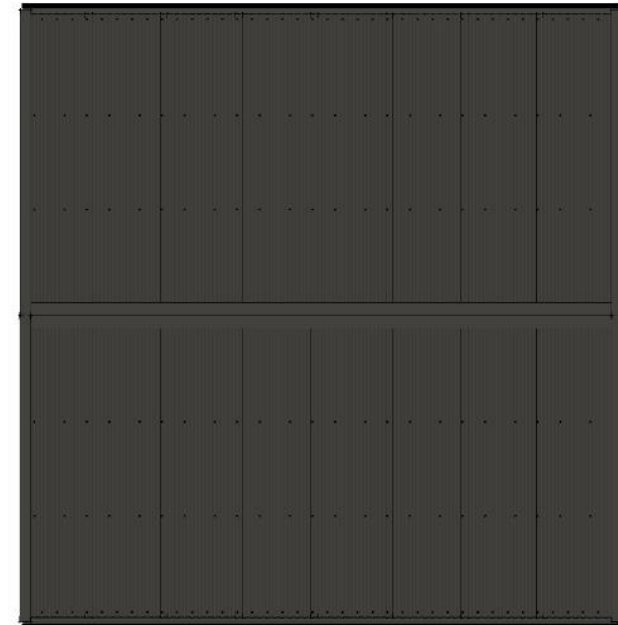
Screw all sheeting off to engineer's plans. Note: Do not place screws into top of the sheets at the pelmet sheets locations only place screws into the overlap of the sheets. These will need to be removed when installing the pelmet flashing.

Check to see if insulation is supplied under your roof sheets. If so, cut insulation to length and install as you are laying the roof sheets.

Turn up ends of sheets 60 degrees (each valley of the sheet) at the ridge line. Roof sheeting will overhang wall sheets approx. 50mm into the gutter.



Overhang gutter by approx. 50mm



Roof sheets in place

STEP TWENTY FOUR – PELMET WALL SHEETING

Locate the side wall pelmet sheeting.

Top of side wall sheets will be flush with top of Eave Purlins.

Check to see if insulation is supplied for your walls. If so, cut insulation to length and install as you are installing the wall sheets.

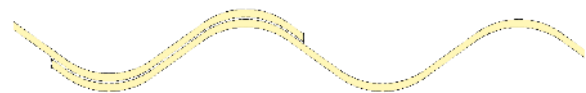
If there are any openings in the side walls, cut sheets as required to match frame opening already installed.

Check each sheet is plumb before screwing off.

Note: Only screw overlap on bottom of sheets so these can be removed with ease and the parapet flashing can be installed.



Screws as per wall sheeting profile



Overlap Detail

STEP TWENTY FIVE – TOP / PELMET GUTTERS

Work out how many and the location of your downpipes. Number of downpipes is provided on your material list.

Cut the downpipe nozzles out of the gutters (to suit above) and install nozzle. Ensure you place silicone on all rivets, and where the nozzle meets the gutter.

Install stop ends on the appropriate gutters. Again, ensure you use plenty of silicone, and make sure you strip the protective plastic back off the guttering and stop ends.

Now need to mark a the fall of the gutters with a chalk line onto the wall sheeting, one end (high end) starting at the top of wall sheeting, and the other end where the downpipe is (low end) having a minimum fall of 1:500.

E.g. A 7.0m long gutter must drop 1mm every 500mm, $7000\text{mm} / 500 = 14$ Building minimum fall= 14mm

Note - The downpipe outlet and spreader downpipe is to be installed into the centre of the shed so you must fall the guttering to this point

Gutter brackets are now to be installed to the wall sheeting at maximum 1.2m spacing's. Rivet gutter brackets to the ridge of the wall sheeting, aligned with the chalk line indicating the required fall.



Hook the gutter onto the end of the gutter bracket and rotate into place. Ensure you place silicone on all gutter joins and lap the gutters in the direction of the fall of the water that will run in the guttering.

STEP TWENTY SIX - FLASHINGS


PELMET FLASHING

Peel the protective plastic coating from all pelmet flashings, lift the pelmet flashing onto the roof on either side of the barn lean-to roofs of the building.

Remove all the screws that had been placed into the lean-to roof sheets and into the pelmet sheet overlaps.

Place the pelmet flashing up underneath/behind the pelmet wall sheets and on top of the lean-to roof sheets. Note: place silicone between the pelmet flashings overlap area.

Screw off all the pelmet sheeting as per the screw placement in the engineers plans through the pelmet wall sheet and the pelmet flashing into the top hat and screw off through the pelmet flashing and through the lean-to roof sheet into the top hat).

 **TIP:** If you want a better water seal trim the pelmet flashing turned down edge around the lean-to roof sheeting hips and valleys, this will reduce the gap between the roof sheet valley and the pelmet flashing.

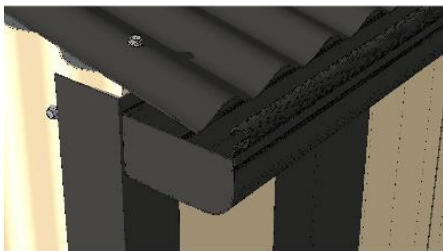
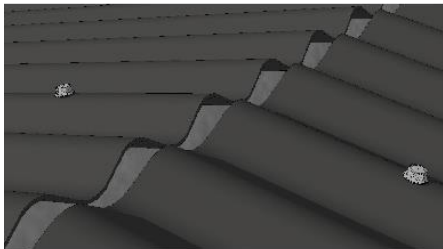
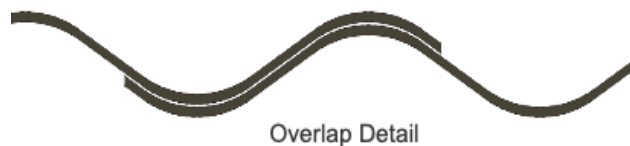
STEP TWENTY SEVEN – TOP / APEX ROOF SHEETING

Check engineer's plans for any strap bracing required in the roof frame and ensure all bracing is installed as per plans.

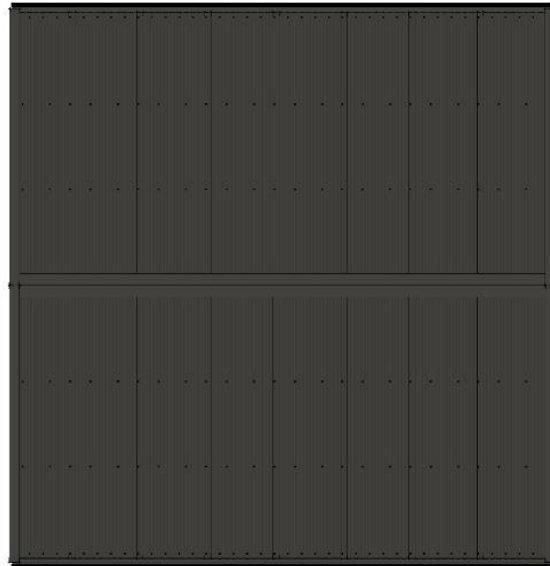
Screw all sheeting off to engineer's plans. Note: Do not place screws into top of the sheets at the roof sheets locations only place screws into the overlap of the sheets. These will need to be removed when installing the roof flashing.

Check to see if insulation is supplied under your roof sheets. If so, cut insulation to length and install as you are laying the roof sheets.

Turn up ends of sheets 60 degrees (each valley of the sheet) at the ridge line. Roof sheeting will overhang wall sheets approx. 50mm into the gutter.



Overhang gutter by approx. 50mm



Roof sheets in place

STEP TWENTY EIGHT - FLASHINGS

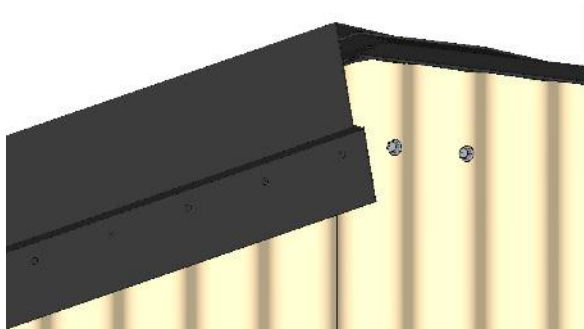
APEX BARGE FLASHING

Peel the protective plastic coating from one barge, lift the barge into place (either side) and align top of the barge with the apex (middle) of the building. Screw through the top leg of the barge into roof purlins. Ensure the barge flashing is tight into the gable end wall sheeting, and that the barge face is plumb (i.e. not leaning over at the top).

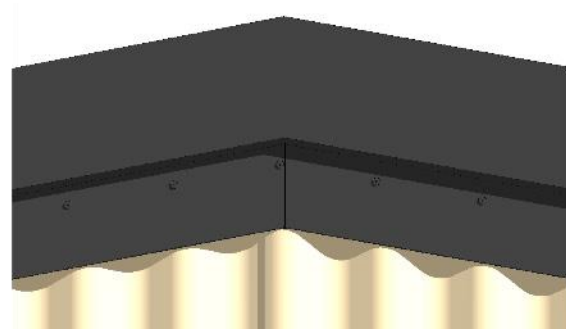
Peel the plastic off the second barge and cut a 'plumb cut' on the apex end (plumb cut will be roof pitch). Lift the barge up into position, overlap this second barge over the first barge - using silicon to seal in gaps in the top leg of the barge. Screw barge into place.

Now put either coloured rivets or wall screws (10-16x16) through the vertical leg of the barge every 4th rib of the wall sheeting.

Plumb cut the ends of the 2 barges flush with the end of the gutters. Now repeat this step for the other end of the building.



First side installed



Barge Capping Complete

LEAN - TO BARGE FLASHING

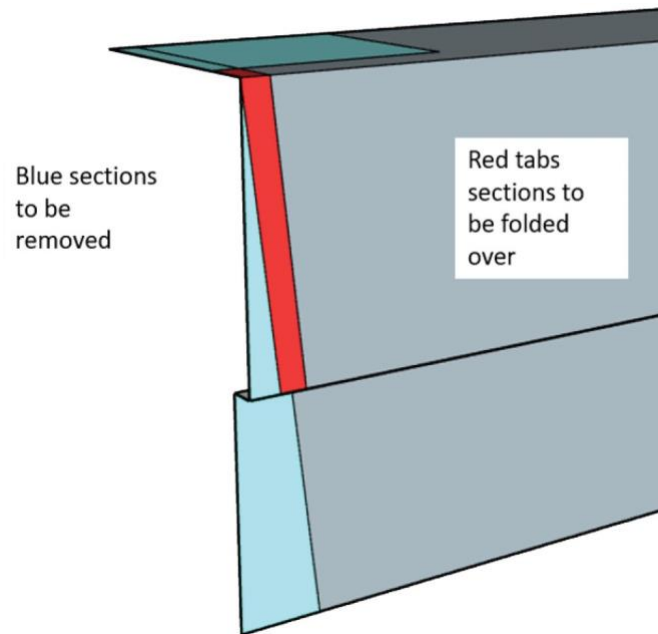
Peel the protective plastic coating from one barge, lift the barge into place (either side) of the lean-to roof.

Mark out 10mm back from the topmost corner as a start point and then mark a pencil line at 11 degree's down the face of the barge flashing.

Cut from the bottom up to the second fold and remove this section mark a section line down themark and trim this section away. Now you should only have a tab down the face of the flashing, this is to be bent around to 90degrees to cover back to the wall sheeting on the end wall.

Also cut out a 85mm x 75mm section out of the top face so this can wrap around the pelmet corner flashing. Screw through the top leg of the barge into roof purlins.

Ensure the barge flashing is tight into the gable end wall sheeting, and that the barge face is plumb (i.e. not leaning over at the top)



Repeat this process on all other lean- to barge flashings.

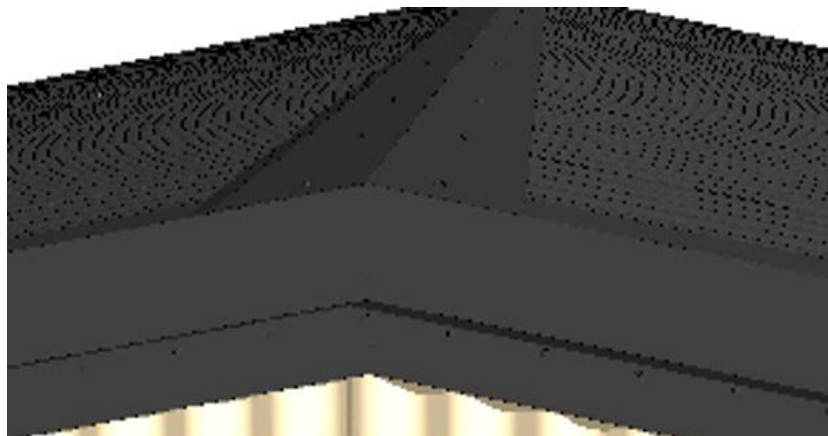
Now put either coloured rivets or wall screws (10-16x16) through the vertical leg of the barge every 4th rib of the wall sheeting.

Plumb cut the ends of the 2 barges flush with the end of the gutters. Now repeat this step for the other end of the building.

RIDGE FLASHING

Ensure ridge capping is flush with the face of the barges.

A good tip is to trim the ends of the ridge (where they run to the gable ends) to a taper for aesthetics when looking up at the ridge from the ground.



CORNER FLASHING & PELMET CORNER FLASHING

Locate corner flashings, peel off protective plastic and install them to the corners of the building using either coloured rivet or walls screw (10-16x16).

Ensure corner flashings are watertight and will not rattle in the wind. Generally, there should be a maximum of 2 fixings every 1.0m down the length of the flashing (one fixing each side of the flashing).



OPENING FLASHINGS

Opening flashing same as corner flashings. Only difference being you will have to notch the flashings to step over the slab. And in the case of headers, each end will need to be notched to suit side opening flashings.



STEP TWENTY NINE - DOWNPIPES

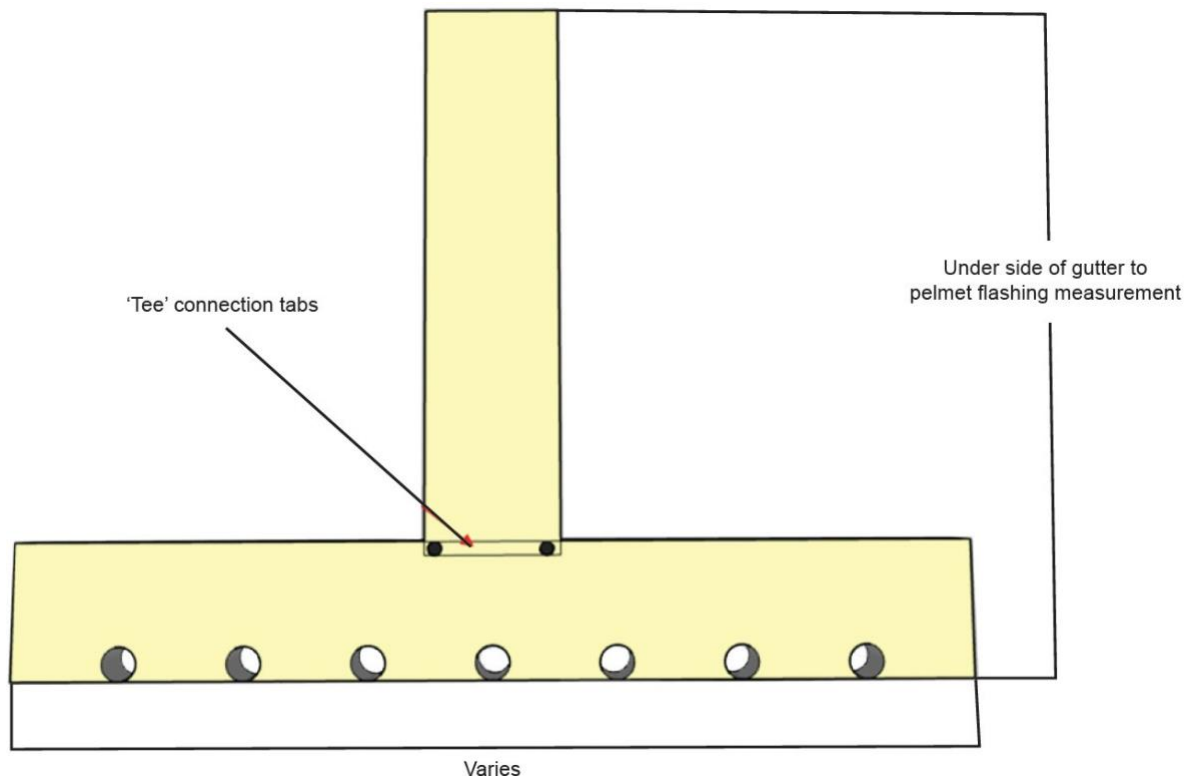
Locate downpipes and peel off plastic protective coating. Fix the downpipes to the nozzles with 4 x rivets or wall screws (10-16x16) per downpipe. Fix the bottom of the downpipe with a roof screw from inside the building, through the bottom wall girt into the downpipe.



SPREADER DOWNPIPE

For the spreader downpipe you will need to measure the height from the base of the apex roof gutter down the pelmet flashing. This gives you the length of the spreader downpipe.

Cut the down pipe into its sizes but make sure you leave a tab for the 'Tee' connection tabs.



You will need to place some outlet holes along one face only of the spreader with a metal cutting hole saw to allow an even flow down the lean-to roof sheets and to ensure the lower guttering does not over flow in this area.

BUILD COMPLETE

Time to do a once over of the building, check that all bolts have been tightened and bracing is installed.

Sweep off the roof, and wipe over all walls to remove any swart from cutting or drilling during the build process.

Sweep off the slab and remove all rubbish. Make sure you get every screw off the slab or driveway before bringing any vehicles into the building.

CONGRATULATIONS



Congratulations, you are now all done!

Time to enjoy your new building and send AltoSheds a completed photo to hello@altosheds.com.au

Review warranty documentation for AltoSheds ongoing maintenance requirements.