

SCOTTSDALE STEEL FRAMING SITE INSTALLATION GUIDE

Steel Framing Installation Manual

Steel Frames Overview

All frames are standard SCS profile consisting of 0.75mm to 1.2mm S350G Steel. All profiles are standard SCS 500 Series C-sections throughout.

Walls

The walls consist of a single C-Section stud at a maximum spacing of 600mm centers, with a minimum one (1) row of nogs

This is generally located at 1200mm centers for plasterboard fixing. Wall strengths are based on restraint by nogs only, i.e. calculations do not require stiffening by linings although this has the effect of increasing load carrying capacity in axial and bending loads substantially.

Ceilings

The ceiling consists of single C-Sections at 600mm centers, with nogs/dwangs at 1200mm centers for plasterboard.

The centers may be reduced to 400mm to allow for greater loading on the ceiling panel.

The design load applied to any ceiling panel is the full dead and live load of the ceiling only such that a ceiling panel spans between external wall, internal wall or roof supports. Same applies for the rafters which span between the external walls and the roof supports.

Roofs

SCS-500-90-350-75 C-Sections at 400mm centers, nogs/dwangs at 1200mm centers

Connections are based on the working strength of a 4.8mm diameter Tek screw in 0.75mm Steel.

Framing down from the roof is generally by a support frame system that transmits lateral loads to the floor below through both external and internal walls.

Alternatively, the support frame (minimum 210mm depth) may span between the load bearing walls below, supporting both ceiling and roof. If necessary the support frame can be plated on one or either side to allow greater spans.

Roof rafters span between combinations of:

- Roof supports and roof support, or
- Roof Support and load bearing wall, or
- Load bearing wall and load bearing wall.

Lintels

Lintels are placed in the walls, supporting the floor and/or roofs to create openings in a building. They are of a truss design, typically 300-400mm in depth spanning up to 2.4-3.0m. For spans greater than this, the lintel is plated one side or both sides using 300-400mm x 1.0mm plate fixed with 4.8mm rivets/screws at 150-200mm centers. Refer to specific structural drawings for details.

Bracing

Typically bracing uses 120mm x 1.0mm S350G X-Bracing with tensioners. Alternatively K braces may be utilized in the steel frames, it is not advised to use both these bracing types along the same wall line, as the lateral bracing provided by these two systems can not be added together – since they both have different stiffness- to find the whole resistance of that wall.

All steelwork is cold-formed metal framing designed and constructed in accordance with AS/NZS 4600. This leads to a conservative design.

Joists

Joists are typically in the form of a truss, manufactured from the standard Scottsdale profile. Refer to structural calculations for further information regarding the additional fixing requirements, max. spans, section, depth etc...

Floors

The steel framing system is designed to be used in conjunction with floors designed for timber buildings, these can be:

- Concrete slab on ground
- Timber framed suspended floors
- Steel framed suspended floors
- Scottsdale Joists
- Or any design allowing a 1.5 KPA Live load

For single story lightweight roof construction, internal load-bearing walls are usually able to be supported without alterations such as thickening.

For heavyweight roofs and multi-storey construction, specific design of the floor is required unless local floor design provides for internal load-bearing walls.

Supports

Support frames are load transfer members positioned between the roof and ceiling panels and are normally located at the ridge and often at the mid-span of the roof rafters. Supports transfer the roof loads to the ceiling joist or directly to the B 300/B 400 beams or simply most of the cases the supports are designed in the form of a truss to span between internal and external walls.

Frame Codes

A code has been assigned to each frame by the designer.

These are shown on all Gcad printouts.

The code number is also written on each panel on the bottom track on the inside and outside.

This makes it easy to find the correct frame when installing them.

W: Walls

C: Ceilings

R: Roofs

S: Supports

B: B300/B400 Beams

J: SCS Joist

P: Props for ceilings

Electrical Grounding

Permanent grounding of the completed steel frame is essential and should be carried out in accordance with local regulations.

In addition for power tool safety during construction, the frame should be temporarily grounded. Specific attention must be paid to hands, wear gloves when carrying frames.

Protect yourself where necessary, e.g. wet weather, wind or extreme temperature conditions

Preparing the Sub-floors

- 1 Sweep the floor pad clear of all debris and loose concrete.
- 2 You have the options of laying a grid of chalk lines out, as a reference line, to which you may make measurements, use a 'PLS' laser, or use the straightness of the steel frame walls to be your guide with measures of rooms and hall ways as your guidelines.

In either case, make sure the walls are fixed to the dimensions intended in the design.

- 3 If you use chalk lining and checking dimensions, lay out the wall frames in the correct position to be erected, i.e. external walls laid off the pad and internal walls laid in their respective rooms and locations. This eliminated the time lost `hunting` for frames when time is crucial.
- 4 Alternatively -depending on the section details- run a treated timber plate underside of all the walls which will give a perfectly flat surface for the walls to be fixed to. Bear in mind that the embedment depth of the fixings will decrease with the introduction of timber plate, so the length of fixings will be more than fixing the frames straight to concrete.

A. Erecting Wall Frames

- 1 Analyze the wall frame numbers and using the orientation holes that are shown to understand what frame is to be erected.
 - Remember that the Orientation hole indicates the bottom left of walls frames. This helps the installer to correctly place the wall in the right place and in the right direction.
 - Long walls and corner rooms generally are a good place to start. The aim is to stand as many walls as possible without using temporary supports, in the quickest amount of time.
 - Actual position of the junction studs should be a good indication of where walls go.
 - If however you find a slight variation of measurement, this can be remedied after all of the major walls are standing.
- 2 Use 2 Tek screws per junction of walls while fixing the walls together.

One Tek screw in the bottom plate junction area as close as possible to channels edge, and with the aid of a short ladder or saw horse, one Tek screw in the top plate junction area as close to the channel's edge.

- 3 Stand all the external and room dividing walls first, leaving the less significant wardrobes and cupboards till later.
This enables a check of the overall dimensions and comparison with the drawing details. All walls on concrete floors should be placed on a DPC – Damp Proof Course.
Care should be taken, that the DPC, covers all junctions and is cut to clear doorways. Timber floors do not require DPC.

- 4 After the exterior walls and room dividing walls are standing and aligned with the chalk lines on the floor, the other internal walls can be fixed.(measurements can be made to check the wall positions if they appear out of place, and if walls need to move, you have only 2 Tek screws to remove and re-screw).
When all the walls are standing in the right place, you can go through installing the final fixings to all the walls.

Screw Schedule

Start at the top of any wall junction and apply the second Tek screw there, go along the full height of the studs and provide enough screws to match the detail as provided in the structural details.

- 5 Drill holes for anchor bolts –diameter as provided in details- more than 50 mm from the edge,

All bracing panels require a 100 x 12mm diameter anchor bolt passing through a 50 mm square galvanized washer, unless otherwise stated in the detail drawings&calculations.

This combination is to be affixed through the bottom plate no more than 50mm from the junction of the stud and plate to which the bracing strap had been attached.

These bracing panels usually span 900mm, 1200mm, 1800mm, or 2400mm. Bracing panels may need an angle at either end which has a hole to receive the anchoring bolt on one flange and screws on the other flange to fix the angle to the studs at either end.

- 6 This is the time to check that the house is square and all frames are plumb or level. Next place temporary braces that are supplied with the house frames and screw them onto the wall frames to maintain straightness through out the building process.
They can be removed once the brace strapping and tensioners are in place.

- 7 Before bolting the frames down to the concrete floor shoot a small number of nails to make sure that the frames are secured enough before final bolting.

- 8 The next anchor bolts to install are the 90mm anchor bolts through 50mm square galvanized washers in the external walls at doorway openings.

There should be an anchor bolt within 300mm of every corner –if this not provided already because of the bracing panel connections-. The double studs beneath the B300 should also have a 90mm anchor bolt and square washer either side of each stud.

- 9 **Strap Brace Tensioners.**

Having tightened the bracing wall anchor bolts, you can apply the Strap Brace Tensioners.

Make sure the tensioners do not interfere with the gypsum lining.

These bracing straps put tension onto the wall frames and unless the walls are bolted down with the anchor bolts, problems could arise.

Drill and fix anchor bolts generally at 900mm centers throughout the interior of the house. Drill @ 900 centers on external walls.

Start with all wardrobe-cupboard doorways, one anchor bolt and washer either side of the doors, at all room doorways.

If the door jamb stud were part of a wall frame that extends 600mm or more, than a single anchor bolt and washer at each end is sufficient.

If the door jamb stud is part of a wall frame that is 600mm or shorter, or where 2 door jamb studs exist back to back on the same frame, then one anchor bolt and washer need to be at the door jamb stud, with one anchor bolt at the other end.

The need for secure fastenings to the floor is critical because a lot of leverage is exerted on the doorjamb studs when doors are opened and closed over the lifespan of house.

In the bracing hold down, refer to structural details provided by the engineer.

- 10 Remove bottom C section in all door openings after all frames are completed. Or alternatively; if screed is going to be applied over the floor, bend the flanges of the bottom C section towards the inside of the frame.

B. Installing Floor Joists

Important Construction Note

When all the Walls frames have been fixed, braced and screwed properly, **ONLY** then can we start the floor joists or ceiling frames –if single storey building-.

- 1 Start with putting the Z brackets (joist hangers) over the marked walls –can be either external or internal-. Note that some of the walls may have Z brackets on either side of the wall, hence there may be two or even more types of Z brackets to install.
- 2 Fix the Z bracket to every intersecting stud with 3No. 4.8x16mm tek screws minimum unless otherwise stated in structural calculations.
- 3 The Z bracket may need to be cut where a flat strap connects to the top chord of a wall. In these instances make sure that the joists are still fixed through the Z brackets and the max. spacing of the joists is satisfied.
- 4 Then check every joist's drawing to see if there are any additional screw requirements – additional screws may be needed at the diagonals close to the ends of the joists-. And make sure these screws are provided on the joists which are delivered to site, provide the missing screws according to the details.

- 5 Then start installing the joists between the Z brackets at their specified locations on the joist layout drawings.
- 6 The angles on either side of the joists –dimensions and thicknesses are as designed by the engineer- may be installed on the ground on both sides of the joists.
- 7 Provide at least 2No. of 4.8x16 tek screws per angle –unless otherwise stated- according to the details provided.
- 8 When all the joists are fixed into position, a measurement should be taken, across the ceiling, similar to the first measure made on the floor. The same dimensions should exist at the floor height and the diagonal measure should indicate that the walls are plumb and square in both directions.
- 9 Now the structural decking can be applied on the joists according to the manufacturer's guidelines.
- 10 Having installed the structural decking over the joists, now first floor walls can be installed with the same principles used for the ground floor walls. Refer to structural details showing the fixing details for load bearing and non load bearing walls.

C. Installing Ceiling Frames

Important Construction Note

When all the Walls frames have been fixed, braced and screwed properly, **ONLY** then can we start the ceiling frames.

Start with a corner ceiling frame, lay out the ceilings frames around the house site taking note of the orientation of double ceiling joists, nogs for corners and underlying walls and the location of any B300 ceiling beams where required.

Also have the ceiling support frames on hand to support larger areas of ceilings and for use in fastening off the B300 ceiling beams.

Walk on the ceiling frames when the B300 beams and roof supports is screwed off. These ceilings are unsafe in their unfixed state.

- 1 The first ceiling frame should be Tek screwed in a corner with its perimeters flush to the walls.
Initially use 1 Tek screw in the corner to the wall and 1 to either end of the frame where it lands flush to the wall frames.
The next frames should be attached to the previous frame only at the extreme corners through the perimeter ceiling joist and once to the wall frame only on the external walls.

No fastenings should be made to any of the internal walls at this stage.

When all of the ceiling frames are in place, a measurement should be taken, across the ceilings, similar to the first measure made on the floor.

The same dimensions should exist at the ceiling height and the diagonal measure should indicate that the walls are plumb and square in both directions.

2

If measures are not as they should be, make alterations to walls or ceilings as needed now, before any ceilings are screwed off onto the wall frames.

- 3 Ceiling frames are Tek screwed together along their adjoining perimeters through the ceiling joists with 2 Tek screws at every passing joist or nog junction in the channel edges. Ensure that Vice Grip clamps are used whenever possible and that ceiling joist pairs are flush to each other whenever they are screwed off together.

Uneven frame connections cause problems for the Gypsum fixers later on.

Refer to the structural details for fixings schedules, typically below notes can be used for guidance;

Wherever there are double ceiling joist spanning a room, these need to be screwed off in pairs using 2 Tek screw at every mid span of a ceiling joist.

On the exterior walls the ceiling frames are Tek screwed to the top plate of the wall with one Tek screw at every passing nog or joist.

- 4 The fitting of B300 ceiling beams and roof support trusses takes some co-operation, a full man team is required, i.e. utilize all the site erectors.

Usually the entire compliment of short ladders and workers are needed in this task.

The B300 are load-bearing structures, designed to spread loads above ceiling spaces to external and internal walls.

Where ever these beams land there should be a double stud combination close by, i.e. within 100mm.

The ceiling frames that are intercepted by this B300 will become part of this structure. As you will see the B300 is partially built with the two lower members being the ceiling joists of the surrounding ceiling panels.

Same principles apply for the roof supports.

Check structural details for screw pattern.

- 5 In order to align the three members of the lower unmade portion of the B300, Prop frames should be used directly under the beam and Vice Grip clamps used to align both ceilings so that they are flush with the plate of the B300.

These Prop frames will be delivered with the house lot frames. Clamping at 1 – 1.5metre intervals along the length of the beam with Vice Grips until the Tek screws are applied – should control alignment.

To reduce the amount of flex through the length of the B300, 25mm brace strapping is attached with Tek screws at no more than 1200mm intervals from the topmost flange of

the B300 to the ceiling joists that are most accessible.

- 6 The internal walls can now be Tek screwed to the ceilings with 2 screws every 600mm through the top plate to the ceilings above or where ever a ceiling passes overhead. Check the screw pattern in the structural details.
Make sure these internal walls are plumb and square to the floor plan. Special care should be taken where doorways are immediately either side of walls, ensure doorways are square and parallel.

D. Installing Roof Frames

- 1 Lay the Support frames up on the ceiling area in preparation for these items this increases productivity of the work later on.

The ceiling layout drawings should have details as to where exactly these ridges may go, and in what sequence they should stand. Fix the ridge support into its position over the ceiling, hence the max. height of the roof panels is fixed.

Stand the roof frames around the perimeter of the house, leaning them up against the ceiling-wall structure, again taking note of the orientation of the hip ends, valley sections and gable end.

2 Roof Frame Connection

Start from the corner of the building where two of roof panels form a hip, or in a building with gable end walls start with the two roof panels on the gable end.

Take note that there should be a measured mark underneath the frame upward from the perimeter.

By calculation this `under mark` will ensure a soffit will form from this eave of a specific size.

Slide the first roof panel over the side walls and make sure the undermark lines with the external edge of the ceiling frames and slide the panel over the gable until the overhang at the edge of the gable wall is satisfied.

Then slide the panel on the other side over the walls until the same conditions is met –the overhang along the gable wall and the side wall-.

The supervisor should direct his crew to follow his instructions since this procedure is likely to be repeated again.

Use one tek screw per rafter to fix these two frames together at ridge line and at the ceiling-roof junction making sure all joints form a flush junction between the two roof frames, as has been the practice in joining walls and ceilings.

There is no need to apply the twist ties and all the required fixings, fixing every rafter with one tek screw to the ridge support and to the top flange of ceiling frames' external face is enough to hold the panels in position. The roof supports at the mid-span of the rafters need to be

already lying down over the ceiling for productivity, but these supports will be installed after all the roof panels are fixed into position.

Continue with the roof panels on the sides of the roof frames which are already fixed. Slide the panels over the roof make sure the external edges of these panels are flush with the previously installed roof panels. As you go through fixing the roof panels; make sure all joints form a flush junction between the roof frames along ridge line and at the ceiling-roof junction, as has been the practice in joining walls and ceilings.

With all the crew helping, this can be achieved quite quickly.

- 3 Now continue lifting roof frames straight into place, now that there is a reference roof panel already fixed into position on either side of gable end.

Where the roof frames meet at the Support, the opposing roof frames need to be fixed together at 300mm through the channels edge. Hence these two frames need to stitch up at the lower corner of the C section.

While the roof frames are being laid up, you will notice a tendency for the roof frames to have slight stress loading between the main ridge and the ceiling edge, this is where the mid support frames form a support between the roof frames and the ceiling, extending from hip corner to hip to corner.

Before commencing another task, now is a good time to tack with a single screw all the rafter pairs as they pass over the ceiling perimeter and hang over to form the eave, which will be made into the soffit and fascia bracket area.

Make sure the eaves over hang evenly all around the house, using the `under mark` as your guide.

The actual dimension will appear in the details.

- 4 Once you have all roof panels in place and all hips stitched together, including any valleys, the mid supports can be stood up to support the roof frames.

If there were no dimensions given as to where to stand the half ridges, one can eye a site for them, ensuring with the aid of a small magnetic spirit level, that they remain plumb and that the hips are supported enough to take out the `saddleback` look that occurs where there is not enough support and the ridge frames need sideways slight adjustment to ensure a plumb line is achieved.

The appearance of the hips is the ultimate test as to whether the support from the mid support frames has been correctly adjusted/set.

- 5 After all the support frames are in place, and held fast with a couple of Tek screws, the next step is to Tek screw all the double rafters wherever the purlins intersect.

The process of screwing off these rafters uses 2 Tek screws, again into the web flange area in

either side of the channel. And again making sure the rafters are flush finished, using Vice Grips to help align the rafter members.

- 6 With all the rafters screwed off as doubles, you can now affix the support frames.

These supports are held in place with 2 Tek screws down through the bottom of the ridge plates into what ever ceiling joist is passing underneath, where a double ceiling joist is passing then 1 Tek screw up into each joist, see structural detail drawings, and 1 Tek screw up into whatever rafter pair is passing over head.

These Tek screws going up pass diagonally through the web flange corner of the half ridge into the rafters as close to the channel corner as possible.

Each screw should tie each rafter to the ridge frames.

E. Installing Fascia and Soffit

Now the eaves area is the next phase to commence work and create the fascia and soffit frames.

Access to these areas is usually difficult without scaffolding, and must be used on houses over a single storey or when the height is beyond the safe reach from trestles.

For single storey houses tall scaffold trestles, short wooden sawhorses, short stepladders, tall stepladders, hanging scaffold brackets and a range of scaffold planks will suffice. Arrange a combination of planks and trestles or ladders to encompass the house at a height where you may work at the eaves without over extending your reach, otherwise scaffolding will be required for health & safety.

- 1 The first items to be fitted are the `twist ties`, these fit between the rafter pairs and are screwed to the ceiling perimeter and top plate of the exterior walls. –Refer to the structural details-

In fitting this bracket you may also use it to hold in place a 400mm width of building paper or weather proofing wrap.

This twist bracket will have 2 or 3 Tek screws in its finished form, we start with 1 Tek screw that will hold the bracket in the rafter pairs and still allow it to pivot. Its pivoting action allows us to lay up the building paper underneath it and then to pull down the bracket and apply 1 Tek screw through the lowest portion of the bracket to the top plate.

Doing so at alternative brackets enables you to move around the house quickly on the scaffolding and trestles as an assistant is unrolling the paper.

Ensure the building paper or wrap is tight and that any joints overlap at least 150mm.

Once the paper or wrap is tacked into place, finish screwing off the brackets; referring the structural details to find out how many screws per leg is required.

- 2 With the 400mm wide building paper or wrap attached to the eaves area, you are now ready for the soffit framing and fascia fixtures.

Out of the details provided you will find details giving the `soffit height` .

This may be an entire frame, or only a ribbon plate or even wide flanged Galvanised angle for some restricted space areas.

- 3 Place lengths of frame or stud channel around the exterior of the house so that a continuous ribbon can be fixed to the walls.

The two other conditions you must make allowances for are an overhang of one length at every external corner to provide fixing for soffit joints.

The overhang need only be half the width of the soffit width for that house, for example a 600mm wide soffit would have a 300mm overhanging ribbon plate at the corners.

The other condition is an additional piece of stud channel set at 45 degrees across any internal corners to give support to the joints that will occur there.

- 4 The `soffit sprocket height` mentioned previously is the height at which the ribbon plates will be attached.

If that height were 2237mm for instance, a measurement would be taken at the external corner from beneath the bottom plate up to the building paper, at which place you can make a pencil mark or a Tek screw.

Do this at two corners; either use a chalk line or a tight nylon string line to the Tek screws and you will have a reference at which to screw the stud channel to.

Be aware the channel may sag if only held at its ends, so the middle of each length needs to be pushed up to the line and Tek screw into place.

This line indicates the underside of the ribbon plate.

The soffit linings will be fastened to these plates, so they need to be secured with two Tek screws across the width of the channel at 600mm centers, screw the plates to studs, diagonal nogs in window headers, and whatever the ribbons may pass over.

Joints in ribbon plate need to be straight ensure the finished line is level and straight.

- 5 With the ribbon plates or soffit frames in place you may now start fixing the fascia brackets if required, or leave it for the roofing contractor.

Section 4

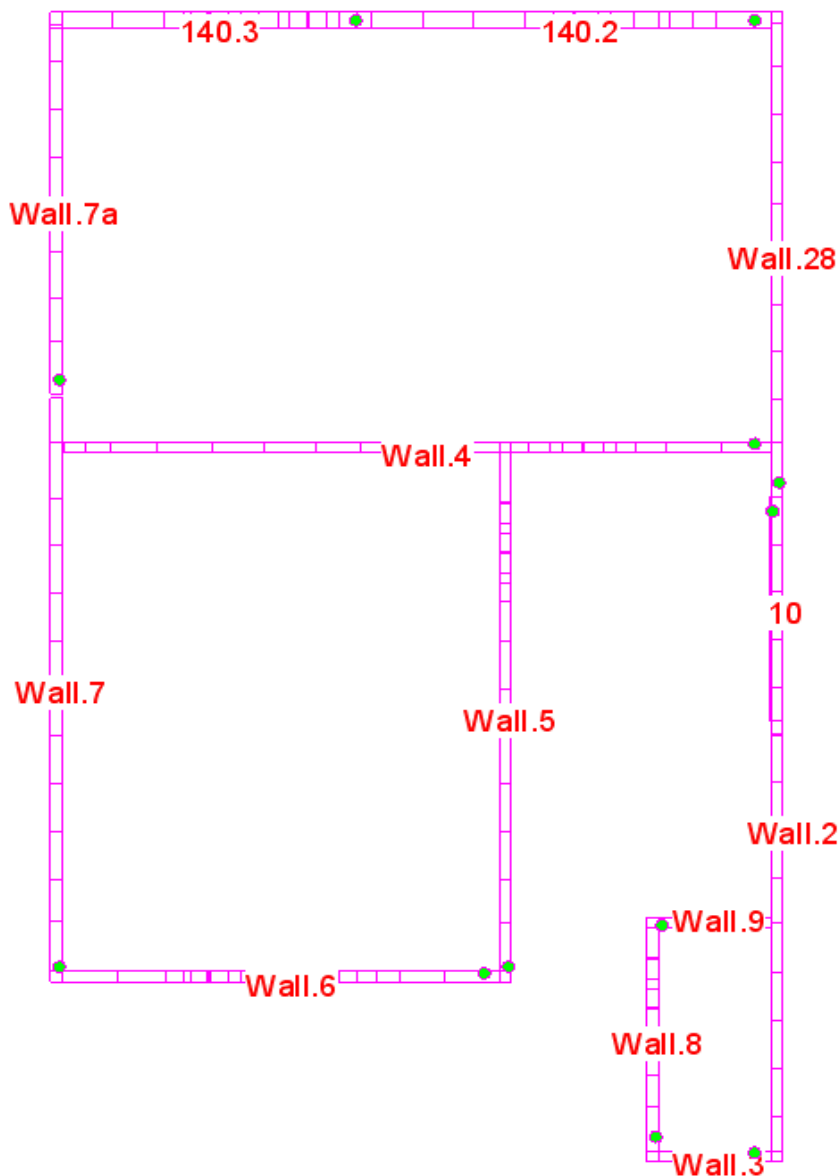
INSTALLATION METHODOLOGY

WALL FRAMES

Locate and find the Wall frames (W01, W02.....)

Step 1 Check onsite plans for orientation holes and location for frames.
The Orientation hole is located on the LEFT END of the bottom plate.

This is seen on the plans a green dot in the frame

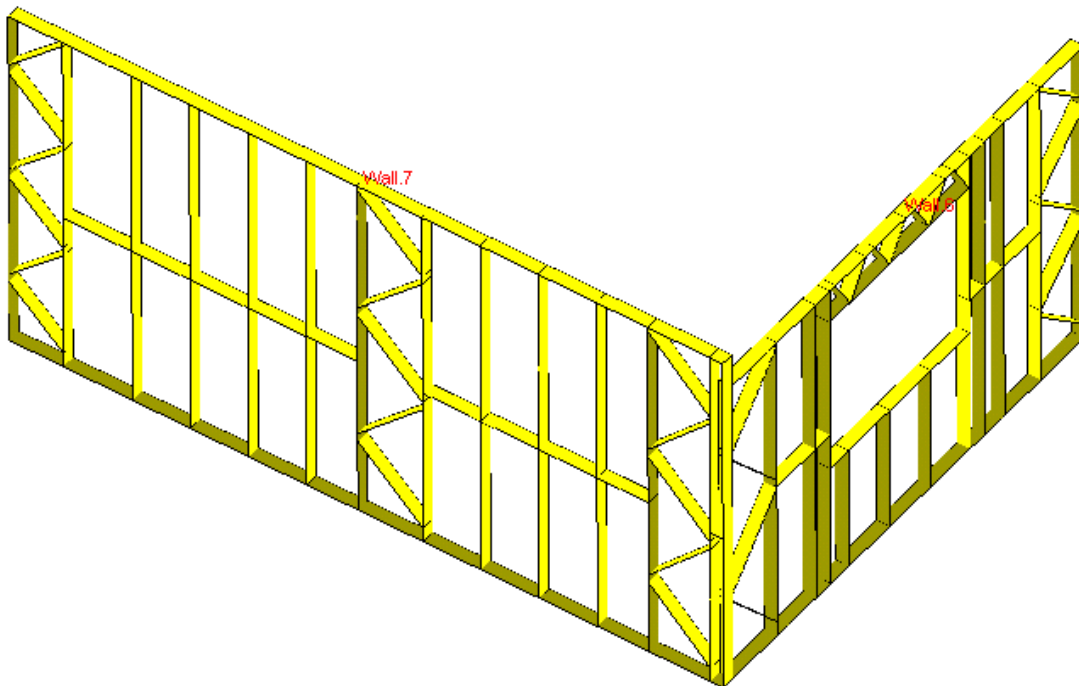


INSTALLATION METHODOLOGY

WALL FRAMES – Commencing site erection

Step 2 Find 2 large walls that can be joined together. These 2 wall frames are used to create the basis for a true square. Connect these 2 frames together.

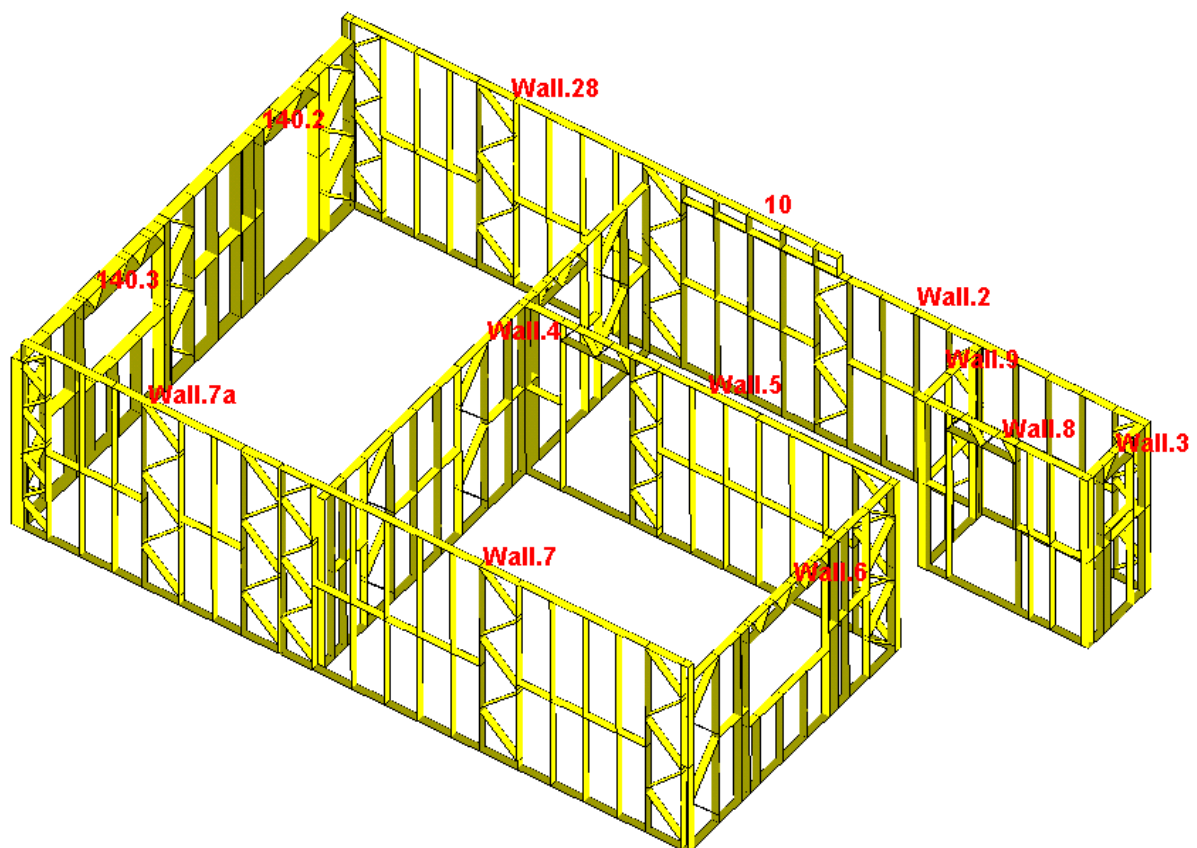
Step 3 This helps the installer to erect the frames square as per the plans.



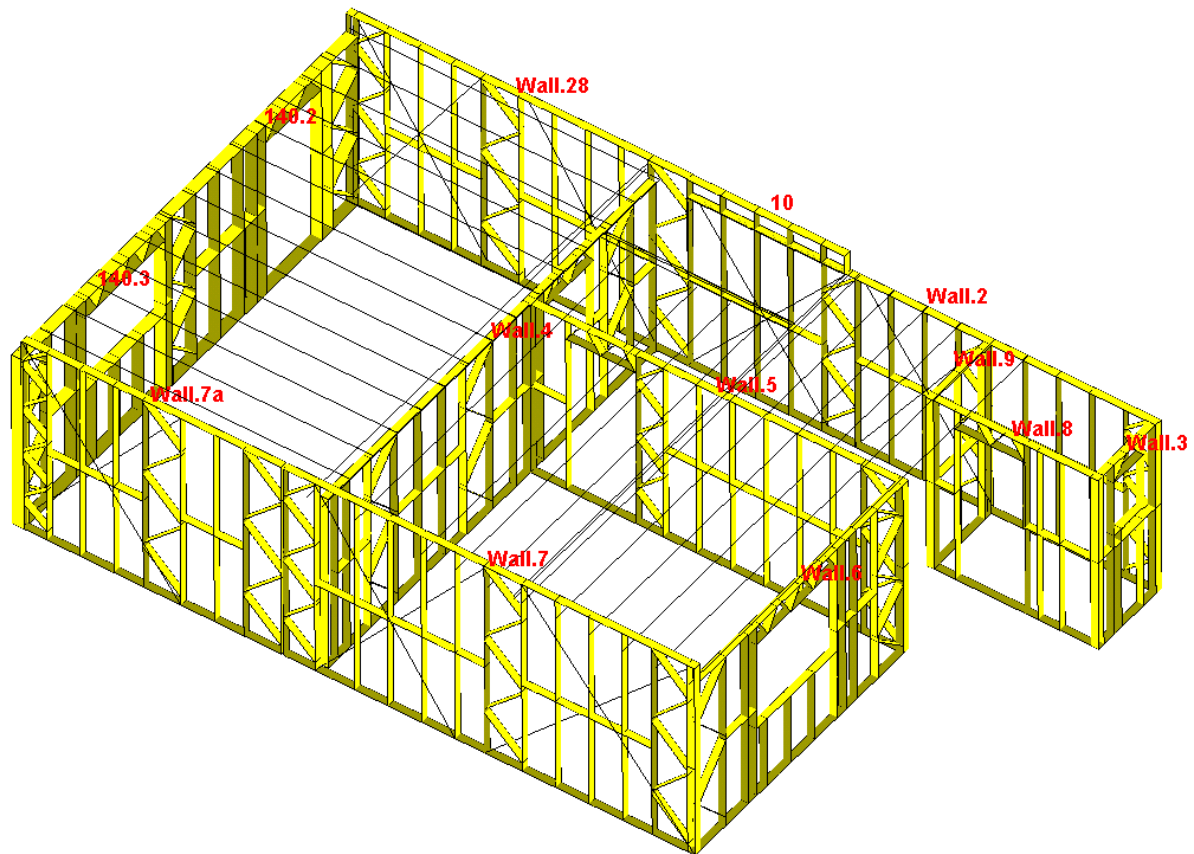
Step 4 Connect all frames together and temporary clamp and support/

Step 5 Brace the frames after the walls have been located in the right place.

Step 6 Check that the walls are parallel and plumb.



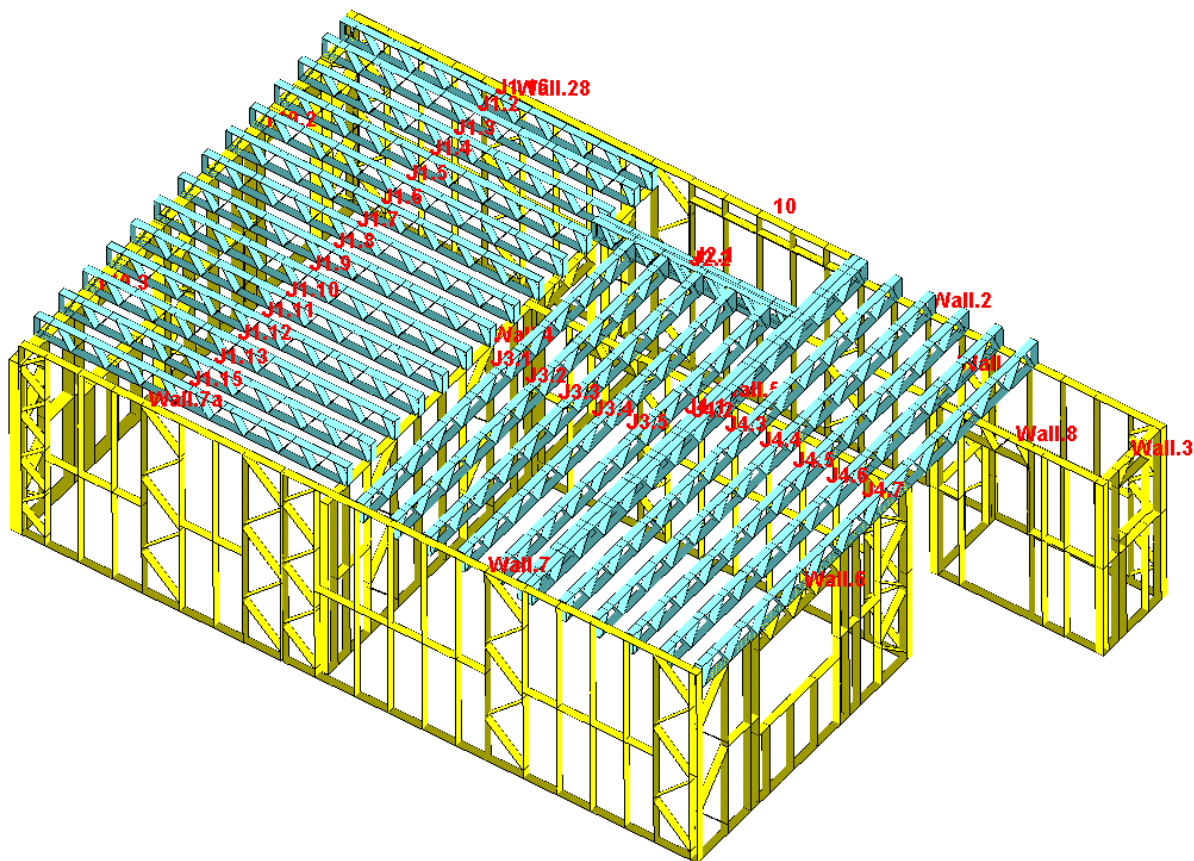
Step 7 Complete the walls by fixing the strap and sheet bracing and tensioners. The locations are shown on separate panel detail drawings



Step 8 Do final check that ALL frames and beams are screwed together correctly.

Installing the Floor Joists

- Step 9** Locate and find the floor joists (J01, J02.....)
- Step 10** Install the two angles on one end of every joist
- Step 11** Install the Z bracket on all the walls
- Step 12** Install the floor joists over the Z brackets , fix the other two angles at the other end of the joists.

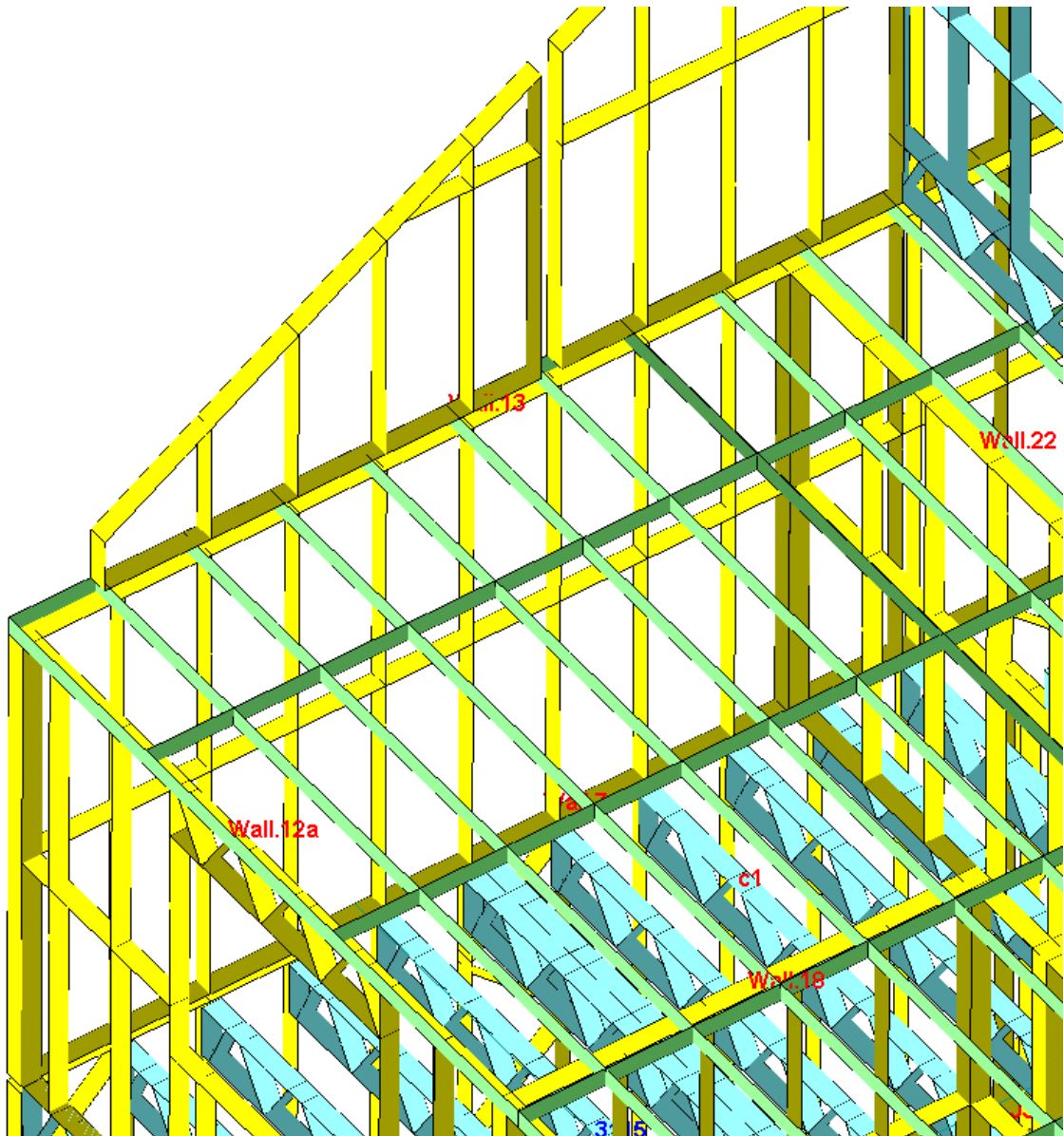


- Step 13** Make sure the overall plan measurements are close to the footprint of the floor below, and the building is square and plumb.

CEILING FRAMES

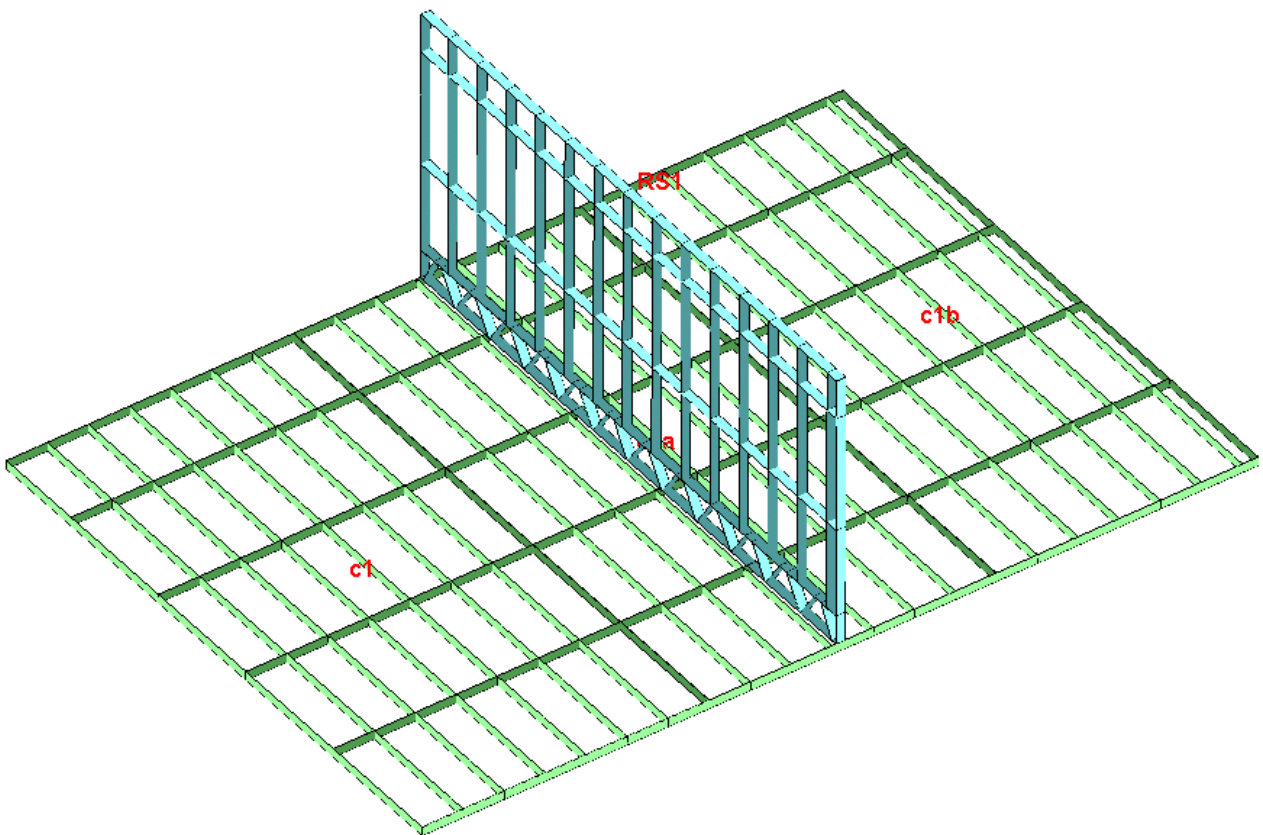
Step 16 Locate and find the floor joists (C01, C02.....)

Step 17 Lift the correct frame over the wall frames and Tek screw them together once they are fitted properly.



CEILING SUPPORT BEAMS/ RIDGE SUPPORTS

- Step 19** Place the B300 beams into the ceiling space between the ceiling panels if exists.
- Step 20** Place the ridge support frame between the two gable ends. And lay the other roof supports on the ceiling frames.
- Step 21** Provide temporary supports for the ceiling frame junctions where the ceiling frame is to be supported by the roof supports other than the ridge support.



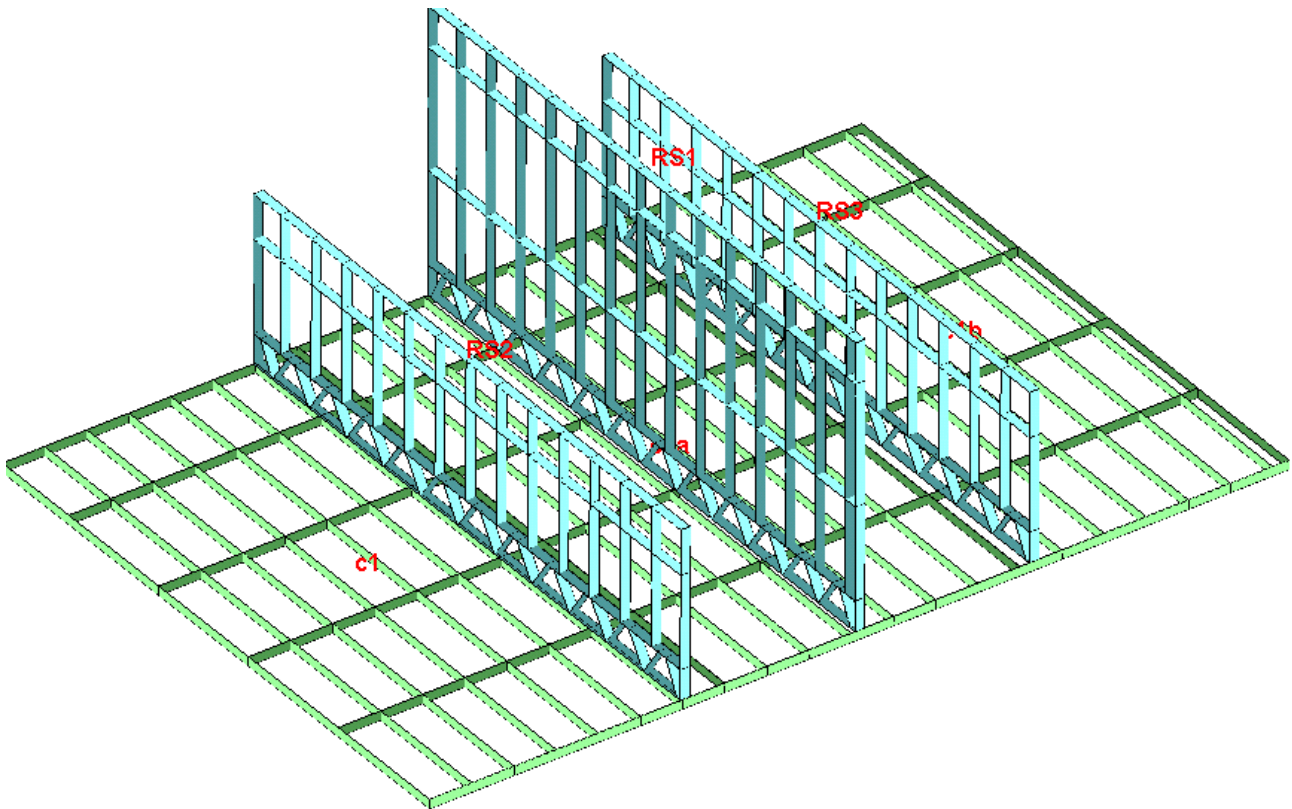
INTERMEDIATE ROOF SUPPORTS

Step 23

When the ridge support frames are screwed correctly, make sure all the ceiling frames are either supported by either temporary supports or by their permanent supports being the wall frames or roof supports.

Step 24

Secondly, if there ceiling frames which are supported by intermediate roof supports like this one, fix the intermediate support at its correct location –given in layout drawings- and fix the ceiling frames to it according to the screw schedule provided in the structural details.



ROOF FRAMES

Step 25

Locate and find the Roof frames (R01, R02.....)

Step 26

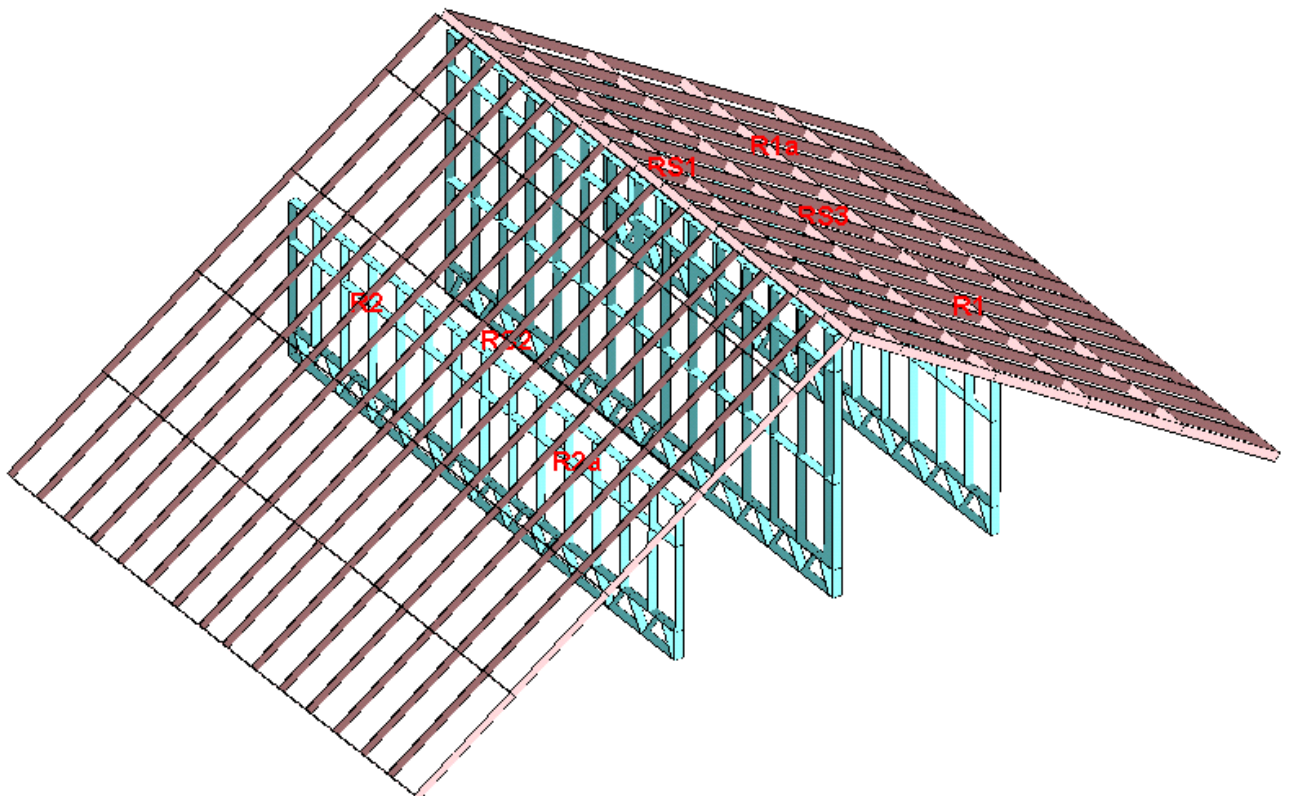
Lift the correct frame over the ceiling frames and Tek screw them together once they are fitted properly.

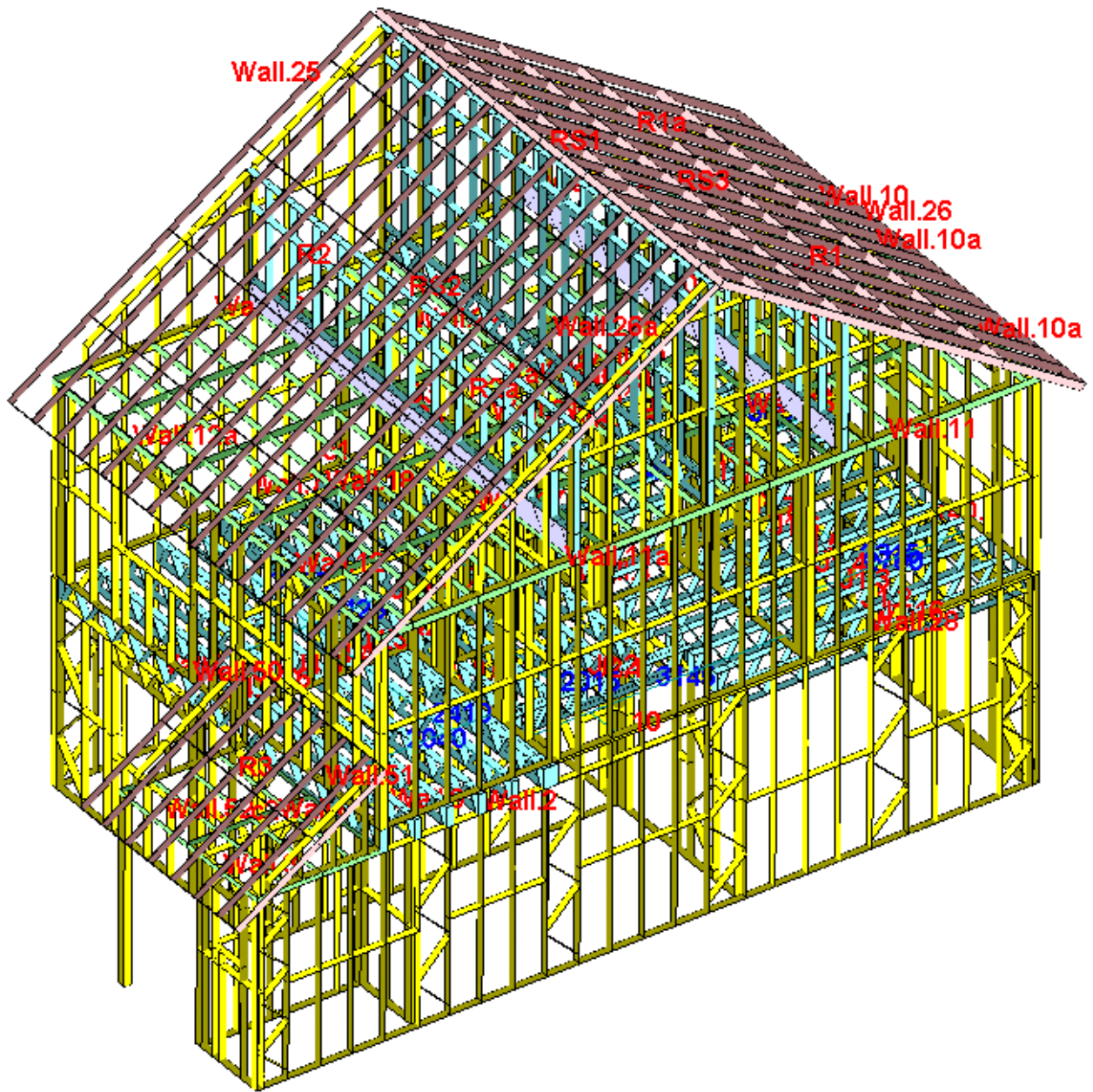
Step 27

When the supports are screwed in place, lift the roof frames into place and screw the roof to the supports and ceiling frames. Refer to Construction Details Manual for the correct screws, locations and number required.

Important Note

Be aware of the roof overhangs when setting up the roof frames. This is important for the correct soffit boards.







Frame Installation & Quality Check List

Job Address:

Installer Name:

INSPECTION 1: GROUND FLOOR WALLS	Builder	Frame Co.	Date
Wall oriented and located correctly as per plan			
Wall frames fixed, square and plumb			
Bottom plates bolted, nailed or screwed correctly			
All bracing located and completed as per manual			
Noggins for gypsum fixing at internal corners			
Plated lintels are installed			
Any structural steel located, fixed and connected to wall			
INSPECTION 2: MID-FLOOR JOISTS			
Mid floor joists nailed/screwed correctly to wall frames, incl. joist hangers, herring bone strapped. Studs under joists (within 100mm) or timber top plate to walls.			
INSPECTION 3: FIRST FLOOR WALLS			
Wall oriented and located correctly as per plan			
Wall frames fixed, square and plumb			
Bottom plates bolted, nailed or screwed correctly			
All bracing located and completed as per manual			
Noggings for gib fixing at internal corners			
Plated lintels are installed			
Any structural steel located, fixed and connected to wall			
INSPECTION 4: ROOFS (CEILINGS, BEAMS AND SUPPORTS)			
Ceiling frames located correctly, and screwed to wall frames			
Noggings for gib fixing at internal corners			
Ceiling panels fixed to each other			
B300/B400 beams located correctly between ceiling panels and continuous back 2 back C sections on top			
B300/400 beams screwed top and bottom correctly			
Support Frames plumb and fixed to Ceiling and Roof frames as per manual			
Roof frames located correctly, and screwed to ceiling and support frames, including ceiling ties to all external walls			
Soffit measurement correct as per plans			
Roof back 2 back rafters fixed at midpoints between nogs			
Roof panels screwed at Ridge, Valleys and Hips as per manual			
Fascia brackets installed straight and plumb			
Flat nogs for apron flashings, valleys, ridge capping and any other special circumstances			
Valley trays installed and screwed as per manual			
INSPECTION 5: FINAL			
Site clear of all debris – no rubbish			



Delivery Check List

Deliver To:

Date:

Attn:

Contact Tel

ITEMS	Required/NA	Delivered
Invoice (payment terms)		
Engineering (PS1)		
Installation Plans		
Screws – Hex (1000)		
Screws – Button (1000)		
Screws – Wood 45mm (100)		
Concrete Nails & Charges		
Anchor Screws with washers		
KD 90 x 45 timber top plate		
DPC / malthoid (20m rolls)		
Bracing angles (90°@ 80 x 80 x 80)		
Brace straps		
Brace tensioners		
B300 (loose/fixed)		
Roof twist ties (CT200)		
Temp brace lengths	30 x 3.5m	
Gib Corner gib / Soffit angles (3.6x40x40)		
2400 x 300mm wide Valley trays		
Valley Nogs		
Prop frames		
2.400 x 90mm		
2.700 x 90mm		
Fascia brackets @ deg.		
Joists STEEL TIMBER		
Particle Board		
Wingtip Screws to fix Particle Board		
Glue to fix Particle Board		
Structural Steel Beams		
Coach Bolts with 50mm Washers		
Coach Screws with 50mm Washers		
Grommets for service cables	400	