Endurance
SHEDS & STRUCTURES

# Premier TH96 Shed Assembly Guide

DISCLAIMER

Endurance Sheds and Structures have prepared and offers this document in good faith, but cannot accept fault or claim for any discrepancies, errors, or omissions.
This document may be updated at any time without notice. This document contains information that is intended to act as a guide only. Some of this information has been provided by experienced and professional steel erectors and garage builders.
Refer to the introduction notes on page 1 of this document.

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Issued 2024

# IMPORTANT NOTICE

**Please read prior to commencing erection of your kit.**

## (1) Construction Health and Safety

**Erection of metal buildings can be dangerous or hazardous. Erectors should contact the nearest OH&S, Work Cover or building safety authority and obtain a copy of all construction site and safety requirements before commencing any work.**

DO have all electrical leads checked.
DO use only approved ladders and/or scaffolding.
DO wear protective clothing, eye-, foot- and headwear.
DO read tool operating manuals before using power tools.
DO secure the construction area to prevent unauthorised access.
DO make sure you have adequate insurance to cover site accidents.
DO NOT leave materials or tools in a location where they might cause someone an injury or be subject to blowing in the wind.

**Site safety is an important issue. Metal building erectors are responsible for their own, and fellow workers', on-site safety.**

The above information is provided as a guide only and is neither final nor comprehensive.
It is the owner's responsibility to acquire and comply with all rules and/or regulations when assembling a structure of any type.

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## (2) Check that your supplier has provided the following:

(a) Slab or footing plan
(b) Bill of materials
(c) Steel marking diagram
(d) Cladding location drawing

Check all the material supplied with your kit against the bill of materials.

**The above details must be read in conjunction with this manual and all errors or transport damage reported before commencing erection.**

No responsibility will be accepted for delays in assembly due to shortages, errors, omissions, or damage.

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# IMPORTANT RECORDS

## Keep this booklet for future reference.

**In the event of an accident or damage to your building, you might need to obtain replacement parts or have repair work carried out.**

Complete the details below so you have a record of your building's history.

---

Model: Premier TH96

Style:

Job No.

Date:

Supplier:

Phone No:

Address:

Erector:

Date:

Notes:

Write the job number showing on the boxes or paperwork.
These numbers are important when ordering spare or replacement parts.

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*Congratulations on purchasing an Endurance Sheds and Structures kit building. The Endurance Sheds and Structures management, staff and distributors hope you get many years' service and use from the product.*

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## Introduction

The following construction notes have been prepared to existing designs and component details at the time of printing. Endurance reserves the right to alter components or specifications shown here without notice and will not accept liability for errors and omissions. Please contact your Dealer regarding any discrepancy between your building components and these notes.

There are many successful methods and sequences of constructing a Premier TH96 depending on the type and size of building, the tools and equipment available, the number of personnel available and their experience and skill. Even among professional erectors of Endurance buildings there is a wide difference of opinion as to the "best" methods and sequences of construction.

Level, accurate concrete slabs, or bored piers with a neat tradesman-like finish are essential for the completion of a quality building. Only people with experience in concreting should attempt forming up, pouring, locating cast in straps in and finishing concrete themselves. For this reason concrete is not included in these construction sheets other than three-dimensional data and concrete specification needed by a professional concreter. See items 2 and 3 below. For those attempting their own concrete work, a 10 step guide can be found on pages 4 titled "10 Steps to Build a Reinforced Concrete Slab-On-Ground".

These construction sheets attempt to show how the various components fit together, with details of all-important connections without necessarily nominating a method or sequence to achieve the assembly. In some areas a suitable method may be suggested and in others "helpful hints" may be added. A typical erection procedure is to prepare slab or pier, assemble frames on slab or ground, stand frames and secure, fit fascia purlins and ridge purlins, fit roller door framing and any additional columns, etc. Next fit wall and roof purlins, check for squareness and fix wall cladding, fix roof sheeting then doors, windows, accessories, remaining trims, and rainwater goods.

Construction sheets are of a general purpose nature and some of the details and connections shown may not apply to your building.

At least 6 drawings or documents (some comprising of more than 1 sheet) are provided with information that is specific for your building. (Sheets 1, 2 and 3 below are provided when the building is ordered). A copy of all 6 sheets together with this assembly guide should be read in conjunction with each other before commencing construction.

1) ARCHITECTURAL DRAWING
   Floor plan, elevations and sections showing main dimensions, doors, windows, materials, finishes, colours and any other accessories or options included. Submit with construction application.

2) ENGINEERING drawings showing steel framework and concrete specifications, general construction and site notes and engineering certification. Submit with construction application.

3) R.C. FLOOR SLAB, or BORED PIER PLAN
   Includes plans of slab or footings showing extent of concrete, reinforcing requirements, size of edge beams or pads, location of roller door ramps, and location of cast-in straps. Submit with construction application.

4) STRUCTURAL STEELWORK MARKING DIAGRAM
   Shows mark number and location of all major structural members.

5) CLADDING LOCATION DIAGRAM
   Shows location and length of all roof and wall sheeting including major flashing and trims.

6) BILL OF MATERIALS (BOM)
   The BOM Is a list of all the items supplied in your building kit. It shows the part code number, mark number where appropriate and a description of the part to help identification.

## Introduction (continued)

**BEFORE STARTING ANY FRAMING WORK:**

1) READ ALL OF THE CONSTRUCTION SHEETS AND DRAWINGS SUPPLIED CAREFULLY.

2) CHECK TOOLS AND EQUIPMENT.
   The minimum tools required for the successful erection of your Endurance Premier TH96 Shed can generally be found in most handymen's tool kits. However read the following list carefully to ensure you have the listed tools and equipment available before starting.
   If pouring your own slab additional formwork and concreting tools are required.

POWER TOOLS

DRILL with hammer capability.
SCREW GUN or VARI-SPEED REVERSABLE DRILL with 8mm (5/16") and 10mm (3/8") Sockets and a Phillips #2 Bit.
Cold cut Metal cutting disc, nibbler, shears, or snips.
AIR or ELECTRIC IMPACT WRENCH with 18mm and 24mm impact sockets is not absolutely necessary, but on large buildings with joint connections i.e. base, eaves, apex, and knee braces, it will save many hours of hard work.

DRILL BITS

A set of HSS bits up to 18mm dia., plus 8mm, 10mm and 12mm dia., masonry bits. Also a 43 mm dia., metal hole saw for standard access doors (Not required for premium or Larnec access doors).

SPANNERS

Two (2) adjustable spanners are a bare minimum, but a selection of 10mm, 13mm, 18mm and 24mm ring and socket spanners make things a lot easier.

OTHER TOOLS AND ITEMS (ladders, props and lifting equipment should be an approved type)

| | |
|---|---|
| Tin Snips | 2 Step Ladders |
| Hack Saw | Spirit level |
| Pop Rivet Gun | String line |
| Pliers | Rope |
| Score and Snap Knife | Timber or metal props |
| Screw Drivers | Metric measuring tape |
| Podger bar | Safety equipment and security barriers |

All OH&S and building authority requirements such as protective clothing, first aid kit, etc.

MANPOWER

Two (2) Persons.

3) CHECK FLOOR/ FOOTINGS for overall size, level, and squareness (equal diagonal dimensions across corners) and location of cast in cleats and HD bolts. Any dimension that is more than 10mm out could cause problems in construction.

4) UNPACK, IDENTIFY AND LAYOUT ALL PARTS. Use the component identification sheets and the descriptions shown on the Bill of Materials to help identification. If site allows layout parts in their relative positions to save time finding components later. Check quantities against Bill of Materials. Contact your Endurance supplier for clarification or rectification in the event of errors.

***NOTE: If building is not to be erected immediately, store all materials, parts, and boxes on packers off the ground and under cover. All materials must be kept dry until assembled.***

# Typical Slab Arrangement and Cast-In Strap Details

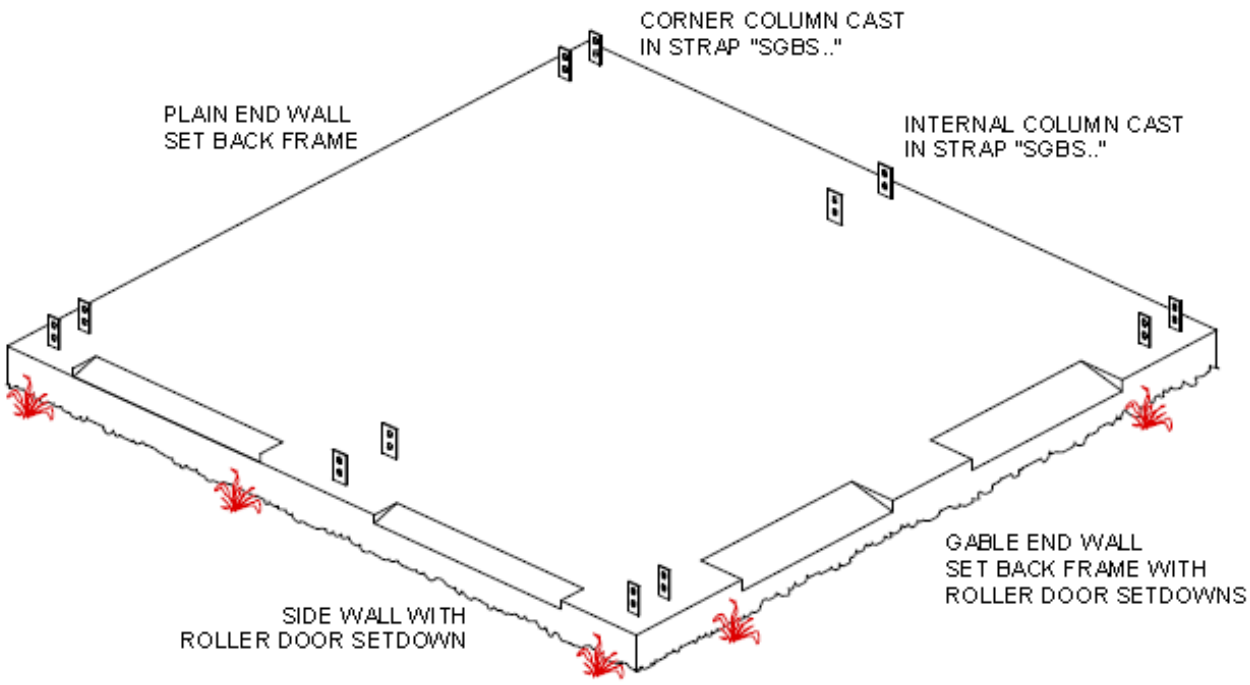
**Concrete Floor and Piers**
Before any excavations or site preparation, carefully read engineering drawings titled "RC Floor Plan and Bored Pier Details", and "RC Slab Plan". These two engineering drawings contain important site, site preparation, bored pier, reinforcement, and concrete specification notes.

Three alternative concrete plans are available in TH96 Sheds:
1) Bored pier plan with RC slab
2) Pier boring plan
3) Integral pad footing plan

The Bored Pier Plan with RC slab will indicate the location of bored piers, overall concrete slab sizes, set downs in slab edge for roller doors, reinforcement requirements, location of construction joints, and pier cap sizes.

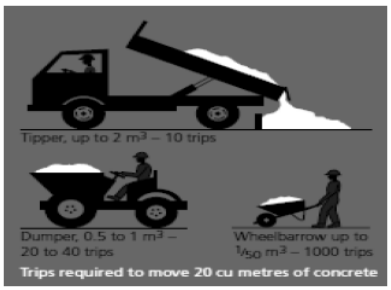
The Pier Boring Plan is a simple plan to aid the pier boring contractor in locating the piers by indicating the centres of the piers in relation to the extent of the building, minimum hole diameters and minimum hole depth.

The Integral Pad Footing Plan with RC slab will indicate the location of integral pad footings, overall concrete slab sizes, set downs in slab edge for roller doors, reinforcement requirements, location of construction joints, and pad footing sizes.



# 10 Steps to Building a Reinforced Concrete Slab-on-Ground

**(All information and images courtesy of SRIA - Steel Reinforcement Institute of Australia)**



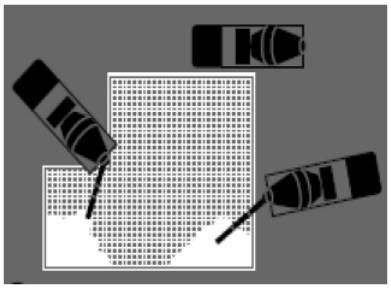

1. PLAN how to place the concrete

Concrete must be placed quickly and simply. Direct from a mixer truck is easiest and best. To do this the truck has to back-up to two or three sides of the job. Site huts, excavated soil, stacks of materials and set out pegs must be located so as to give trucks enough room to move.

When site access is limited, consider using super plasticised concrete which flows easily. As this 'flowing' concrete can be pushed, using a shovel, three times as far as ordinary concrete, the mixer truck may need to back-up to only one side of the job. As super plasticised concrete will impose higher loads on the formwork and can move steel reinforcement as it 'flows' into place, it is necessary to have stronger formwork and well-tied steel reinforcement. Remember that all concrete, even super plasticised concrete, must be properly compacted as it is placed.

When a mixer truck cannot get close to the slab, means of transporting the concrete to its final position include pump, tipper, dumper, and wheelbarrow.

On restricted or hilly sites a mobile crane with a hopper or bucket can be used. Concrete pumps are also a popular method of placing concrete especially on restricted sites: those with hydraulic booms are particularly suitable. The crane must be located on firm ground and parked between the road and the job so the crane boom and bucket can swing between the mixer truck and the job.



Most crane buckets hold over half a cubic meter while the crane boom can reach over 20 meters. Cranes don't need much site clearance and buckets deliver concrete into the middle of large slabs without anything having to be dragged or carried over the steel reinforcement and formwork.

Pumps can push concrete over 200 meters in a straight line but if the supply line rises or bends, the pumping distance is less. Extra workmen for placing and finishing the concrete may be needed because the pump must work continuously and supply the concrete quickly.

**2. PREPARE the ground**

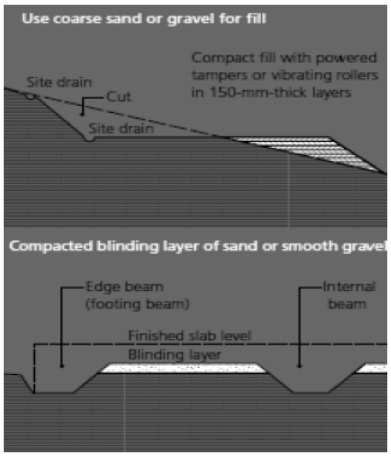
Scrape off the top soil with grass roots in it, then level and compact the sub-soil which has been uncovered.

Sloping sites will need to be cut and filled where the slab is to be placed. Most soil can be used for fill.

Clay fill is not recommended. If the site is clay, cut materials should be removed and granular filling (coarse sand or gravel) used to fill the low side of the site.

The Building Code of Australia sets requirements where fill is proposed. Check with your local authority if you plan to fill.

Dig out the shape of the beams for the slab (and any necessary surrounding drainage trenches) in the prepared ground.




**3. FIX the edge formwork**

Form the edge of the slab and any steps in the slab where the floor has a step-down.

The formwork must be well staked in place (usually at 1m max spacing) and thick enough so as not to bend under the load of fresh concrete paced against it. Formwork must be rigid.

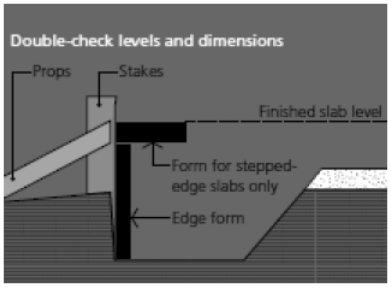
Double-check the level dimensions and shape of the formed area before any concrete is placed.

**4. INSTALL service pipes**

Drainage and water-supply pipes which are to be covered by the slab must be installed by a plumber at this stage.

Termite collars have to be fitted to all pipes passing though the slab, where the slab is used as the barrier against termite attack.

Concreters must take great care not to move these drainage pipes once they have been set in position.




**5. LAY concrete underlay**

The vapour barrier underlay membrane for a concrete slab must be a sheet of impermeable material, resistance to ultraviolet deterioration and impact during construction. It is safest to use a known brand which is stamped as being suitable for use as concrete underlay.

Place the underlay over the prepared ground and lap it up over the edge of the formwork. Use as wide an underlay as possible (it is sold in rolls up to four meters wide) so that few joints are needed.

Make sure the underlay folds down into the beam trenches and laps up over the top of the framework.

Free edges of underlay must be firmly secured before the concrete is placed.

At joints, the underlay should be lapped at least 200mm and held in place with small pieces of tape at about 1m centres. Continuous taping of joints is required by some local regulations. Where possible, the lapping should occur in the trenches.

Where drainage and service pipes rise thought the slab the underlay should be cut, turned up and taped around the pipe, a piece of underlay should then be placed over it and taped to the turned-up underlay.



**6. FIX reinforcement in the beams**

A slab-on-ground has thickened edges which are called edge beams. Sometimes slabs also have internal beams which act as stiffening beams or wall supports. All these beams need steel reinforcement fixed near the bottom - this is called bottom steel.

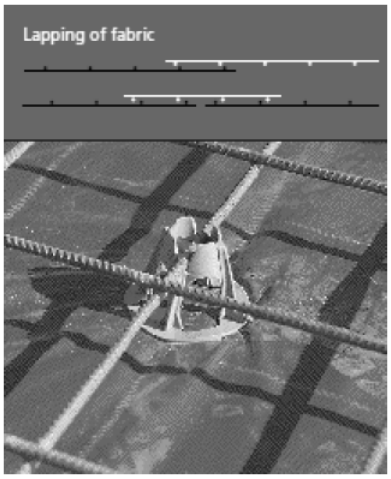
Trench mesh is the usual type of bottom-steel a single layer or a double layer (one directly on top of the other separated by a fitment or ligature) as required by the building plans. 40mm Min. concrete cover to the reinforcement is required (up to 75mm may be specified if soil has aggressive ground water). In some areas greater depth and heavier reinforcement is required.

***Bottom-steel must be place on bar chairs or trench mesh spacers.***

Trench mesh should have a half-a-meter minimum overlap. Full width overlap at corners. (It is a sound precaution to wire the mesh together at these overlaps.) The steel reinforcement must be chaired in its proper position to act effectively.

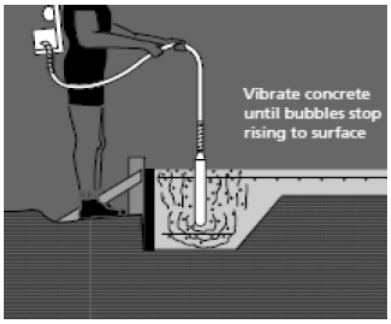
# 10 Steps to Building a Reinforced Concrete Slab-on-Ground (continued)

**(All information and images courtesy of SRIA - Steel Reinforcement Institute of Australia)**




**7. FIX reinforcement in the slabs**

***Top-steel is needed over the whole area of the slab-on-ground.*** The main reason for this top-steel is to control the cracking which inevitably occurs as the concrete dries out.
Fabric sheets (6 x 2.4m standard size) are usually used as top-steel and are set on bar chairs with bases prior to curing the concrete so as to leave a minimum of 20mm concrete cover above the steel reinforcement.
Any floor-heating services or electrical wiring conduit to be embedded in the slab should be secured at this time. If hot water heating pipes are to be embedded in the slab, the slab thickness may need to be increased.
Slab fabric should be lapped by one full panel of fabric so that the two outmost traverse wires of one sheet overlap the two outmost transverse wires of the sheet being lapped.
Holding down bolts for wind bracing and other ancillary fixtures are usually positioned at this stage.




**8. PLACE and compact the concrete**

Order concrete by strength-grade and slump. Never use less than N20 grade concrete (20 MPa strength, with 20mm nominal maximum aggregate size and 80mm slump). Never order concrete with a slump of more than 100mm. In fact 80mm slump is better. It may be slightly harder to work into place, but it can be finished sooner and will shrink less.
The slump of concrete is a rough measure of the amount of water in the mix. If water is added the mix will become sloppy and easier to work into place but the concrete will be weaker, crack more and have a poor surface finish. For this reason no water should be added to concrete during the placement and finishing operations.
Place each load of concrete next to the previous load. Start at one end and work along the slab making sure that each new load is well mixed into the load before.
Do not let concrete free-fall more than one meter from the chute, pipe, or bucket when it is being placed.
Level the surface of the concrete with a screeding board. It is important to move the screeding board with a sawing and chopping motion as this helps to compact the concrete.
A mechanical vibrator should be used to compact the concrete. Poke the vibrator into the concrete every half meter over the length of the beam and hold it in place until the concrete settles and bubbles stop rising to the surface.
Hold the vibrator straight up and be careful not to move the steel reinforcement or damage the underlay or formwork.



**9. FINISH the slab surface**

When the concrete compaction and screeding is done, the slab should be roughly floated with a trowel to give a smooth surface. After floating, the slab should be left to set hard enough so that a man standing on his heels will not sink more than 5mm into the concrete.
Free water (bleed water) will rise to the surface of the slab after it is levelled. Wait until the surface of the water dries before doing the final float or trowel finishing. On a cold day the bleed water may have to be dragged off by pulling a rope or hose over the surface.
***Never spread dry cement or sand over the slab to absorb the bleed water as this will make the finished surface weak and dusty.***
A mechanical helicopter is the best tool to get a good finish on the slab. Make one pass with the helicopter over the whole slab starting where the concrete was first placed. Then go back and make a second pass over the whole slab working up and down the length of the slab instead of across it.
Do not try to finish the slab by moving the helicopter around in one area to long.
Wood or steel hand-floats and trowels do a good job too - if there is no helicopter - but however it is done, the whole surface should be worked over twice.
Save finishing time by finishing the slab only to the standard needed for the type of floor finish to be used. If tiles are to be laid in mortar, then slabs need only to be screeded. A wood float finish is good enough for carpet, while steel or sponge towelling is needed for floors which are to have tiles glued to them.

**10. CURE the concrete slab**

Concrete must be protected against loss of moisture as soon as the surface is sufficiently hard to resist spoilage. This process is known as curing.
If concrete is not cured it will dry out too fast, lose strength and the surface may crack and turn dusty.
Curing involves holding water in the concrete - allowing the concrete to gain its full strength.
One way is to cover the slab with sheets of plastic or building paper and hold the sheets down with planks. Leave the sheets in place at least 3 days it may be necessary to gently spray some more water under the sheets after the first day.
This method also has the advantage of protecting the slab from possible rain damage.
Another way is to spray onto the slab a special chemical called a 'curing compound' which stops water drying out of the concrete too fast.
Use a good quality curing compound, as there are some which are much better than others.
Curing compounds should be sprayed over the slab with a double coat straight after the surface finishing.
***If at a later date it is the intention to add floor coverings to the slab, then take care in the selection of the curing compound as some will not accept adhesives.***

**CONCLUSION**

As can be seen, planning, preparation, steel reinforcement, placing, finishing, and curing all play an integral part in the construction of a reinforced concrete slab-on-ground. Failure to follow any of these steps may lead to the following problems occurring:

- Non-level floors.
- Plastic cracking (cracks occur prior to final set of concrete).
- Post-hardening cracking (drying shrinkage, foundation movement).
- Dusting of concrete surface.

Note: In some circumstances controlled cracking of concrete is acceptable; all concrete has a natural tendency to shrink with cracking being one of the results of such shrinkage.

# Member Identification

## Rolled Sections

**GENERAL**
All rolled sections are indicated as "CS..." on the steel marking plan. Hole punching details can be referenced on the Bill of Materials. The drawings below are indicative of material and punching requirements, depending on their usage and location.

**COLUMNS (CS...)**
Can be a C150, C200, C250, C300 or C350. For all sections up to C300, 2 flange holes in base end (3 flange holes for C300& C350), web and flange at knee end. All holes are ø18 x 22mm elongated.

**RAFTERS (CS...)**
Can be either C150, C200, C250, C300 or C350. 2 rows of web and flange holes each end. All holes are ø18 x 22mm elongated.

**FASCIA PURLINS (CS...)**
C150's only, unpunched

**END WALL MULLIONS (CS)**
Can be either C150, C200, C250, C300 or C350. All sections are unpunched.

**ROLLER DOOR MULLIONS (CS)**
C150's for Series A doors.
C200's for Series B doors
C250 for Series B + wind locks
All sections are unpunched.

**OVERHANG STRUT (CS)**
C200, punched.

**96 TOPSPAN BATTENS (TS...)**
Used as roof battens, wall battens and roller door heads.

**61 TOPSPAN BATTENS (TS...)**
Used as inner boxing batten for roller door head or boxing beam.

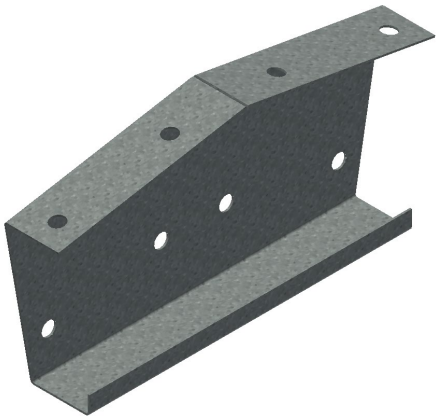
**RAKING ANGLE (RA...)**
30 x 30 Angle-used on setback end frames, no holes

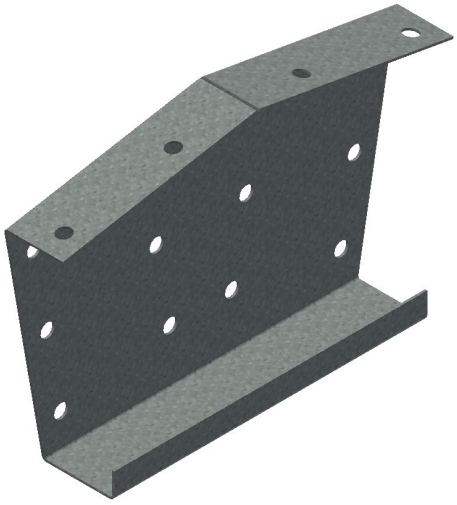


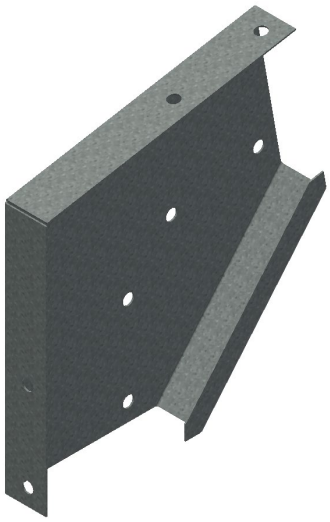
## Connection Cleats

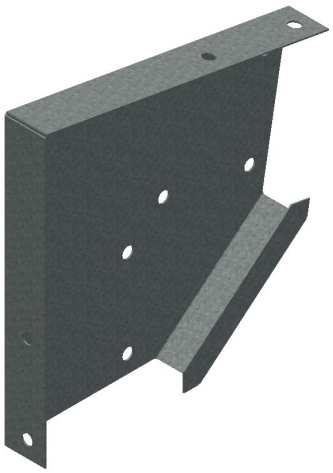
### General

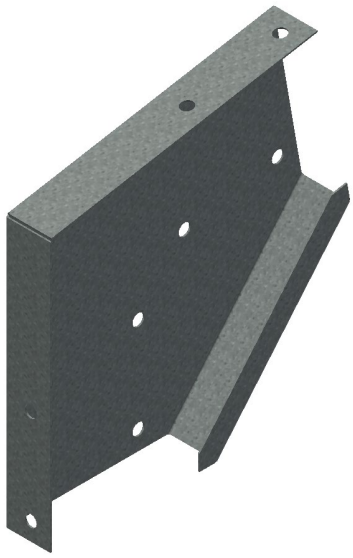
All connection cleats should be supplied from Endurance suppliers with a part number for easy identification. The location of the cleats within the framing connection can be found in this assembly guide. Quantity of components can be referenced on the Bill of Materials.

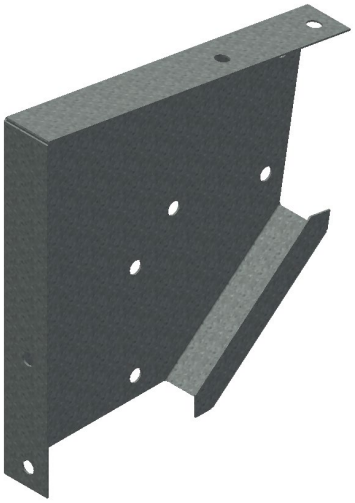
| APEX CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  ALL CLEATS SIMILAR SIZE AND HOLE PLACEMENT MAY DIFFER | GA15_7.5 | C150 Rafter 7.5° Roof Pitch |
| | GA15 | C150 Rafter 10° Roof Pitch |
| | GA15_15 | C150 Rafter 15° Roof Pitch |
| | GA15_20 | C150 Rafter 20° Roof Pitch |
| | GA20_7.5 | C200 Rafter 7.5° Roof Pitch |
| | GA20 | C200 Rafter 10° Roof Pitch |
| | GA20_15 | C200 Rafter 15° Roof Pitch |
| | GA20_20 | C200 Rafter 20° Roof Pitch |
| | GA25_7.5 | C250 Rafter 7.5° Roof Pitch |
| | GA25 | C250 Rafter 10° Roof Pitch |
| | GA25_15 | C250 Rafter 15° Roof Pitch |
| | GA25_20 | C250 Rafter 20° Roof Pitch |

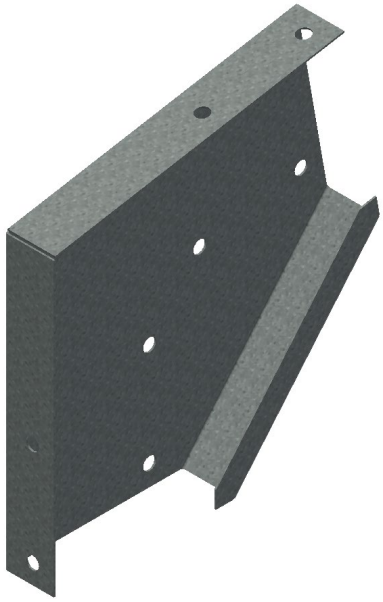
| APEX CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  ALL CLEATS SIMILAR SIZE AND HOLE PLACEMENT MAY DIFFER | GA30_7.5 | C300 Rafter 7.5° Roof Pitch |
| | GA30 | C300 Rafter 10° Roof Pitch |
| | GA30_15 | C300 Rafter 15° Roof Pitch |
| | GA30_20 | C300 Rafter 20° Roof Pitch |
| | GA35_7.5 | C350 Rafter 7.5° Roof Pitch |
| | GA35 | C350 Rafter 10° Roof Pitch |
| | GA35_15 | C350 Rafter 15° Roof Pitch |
| | GA35_20 | C350 Rafter 20° Roof Pitch |

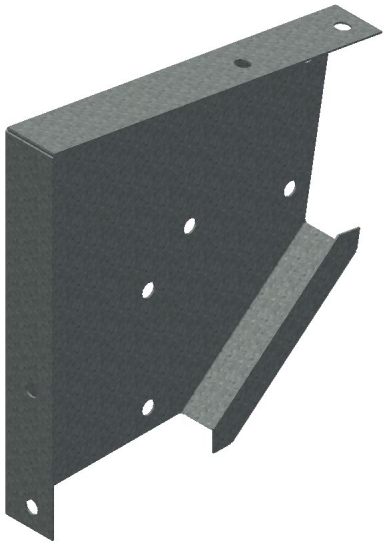
| KNEE CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | BGLK15_3 | C150 Column to C150 Rafter<br>3° Roof Pitch |
| | BGLK15_5 | C150 Column to C150 Rafter<br>5° Roof Pitch |
| | BGLK15 | C150 Column to C150 Rafter<br>7.5° Roof Pitch |
| | GK15 | C150 Column to C150 Rafter<br>10° Roof Pitch |
| | GK15_15 | C150 Column to C150 Rafter<br>15° Roof Pitch |
| | GK15_20 | C150 Column to C150 Rafter<br>20° Roof Pitch |

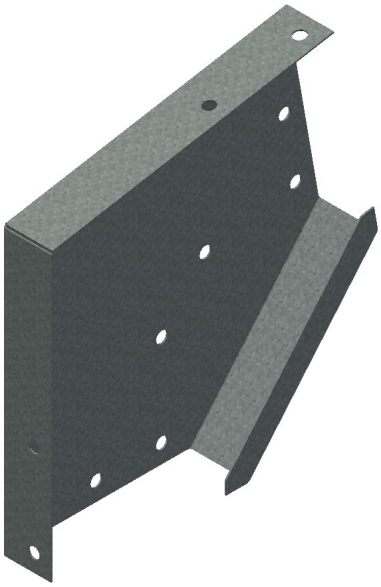
| UPPER SKILLION KNEE CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | BGUK15_3 | C150 Column to C150 Rafter<br>3° Roof Pitch |
| | BGUK15_5 | C150 Column to C150 Rafter<br>5° Roof Pitch |
| | BGUK15 | C150 Column to C150 Rafter<br>7.5° Roof Pitch |
| | BGUK15_10 | C150 Column to C150 Rafter<br>10° Roof Pitch |

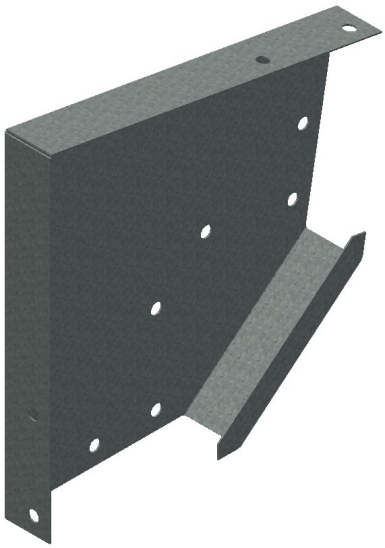
| KNEE CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | BGLK20_3 | C200 Column to C200 Rafter<br>3° Roof Pitch |
| | BGLK20_5 | C200 Column to C200 Rafter<br>5° Roof Pitch |
| | BGLK20 | C200 Column to C200 Rafter<br>7.5° Roof Pitch |
| | GK20 | C200 Column to C200 Rafter<br>10° Roof Pitch |
| | GK20_15 | C200 Column to C200 Rafter<br>15° Roof Pitch |
| | GK20_20 | C200 Column to C200 Rafter<br>20° Roof Pitch |

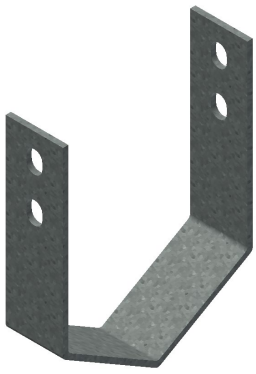
| UPPER SKILLION KNEE CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | BGUK20_3 | C200 Column to C200 Rafter<br>3° Roof Pitch |
| | BGUK20_5 | C200 Column to C200 Rafter<br>5° Roof Pitch |
| | BGUK20 | C200 Column to C200 Rafter<br>7.5° Roof Pitch |
| | BGUK20_10 | C200 Column to C200 Rafter<br>10° Roof Pitch |

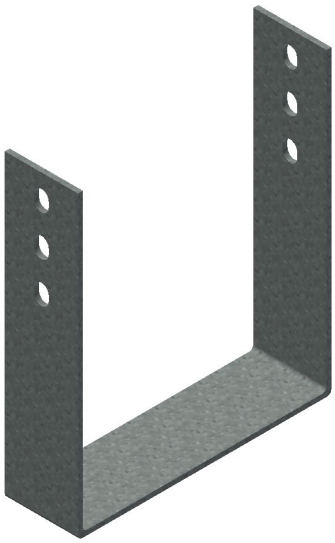
| KNEE CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  ALL CLEATS SIMILAR SIZE AND HOLE PLACEMENT MAY DIFFER | BGLK25_3 | C250 Column to C250 Rafter 3° Roof Pitch |
| | BGLK25_5 | C250 Column to C250 Rafter 5° Roof Pitch |
| | BGLK25 | C250 Column to C250 Rafter 7.5° Roof Pitch |
| | GK25 | C250 Column to C250 Rafter 10° Roof Pitch |
| | GK25_15 | C250 Column to C250 Rafter 15° Roof Pitch |
| | GK25_20 | C250 Column to C250 Rafter 20° Roof Pitch |

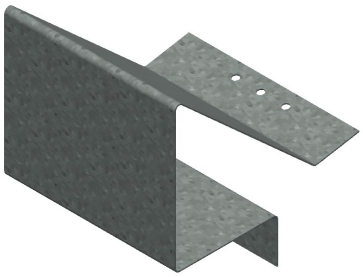
| UPPER SKILLION KNEE CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  ALL CLEATS SIMILAR SIZE AND HOLE PLACEMENT MAY DIFFER | BGUK25_3 | C250 Column to C250 Rafter 3° Roof Pitch |
| | BGUK25_5 | C250 Column to C250 Rafter 5° Roof Pitch |
| | BGUK25 | C250 Column to C250 Rafter 7.5° Roof Pitch |
| | BGUK25_10 | C250 Column to C250 Rafter 10° Roof Pitch |

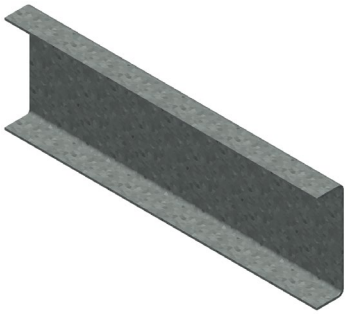
| KNEE CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | BGLK30_3 | C300 Column to C300 Rafter<br>3° Roof Pitch |
| | BGLK30_5 | C300 Column to C300 Rafter<br>5° Roof Pitch |
| | BGLK30 | C300 Column to C300 Rafter<br>7.5° Roof Pitch |
| | GK30 | C300 Column to C300 Rafter<br>10° Roof Pitch |
| | GK30_15 | C300 Column to C300 Rafter<br>15° Roof Pitch |
| | GK30_20 | C300 Column to C300 Rafter<br>20° Roof Pitch |

| UPPER SKILLION KNEE CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | BGUK30_3 | C300 Column to C300 Rafter<br>3° Roof Pitch |
| | BGUK30_5 | C300 Column to C300 Rafter<br>5° Roof Pitch |
| | BGUK30 | C300 Column to C300 Rafter<br>7.5° Roof Pitch |
| | BGUK30_10 | C300 Column to C300 Rafter<br>10° Roof Pitch |

| BASE CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  ALL CLEATS SIMILAR SIZE AND HOLE PLACEMENT MAY DIFFER | SGBS15 | C150 Cast in Column Cleat |
| | SGBS20 | C200 Cast in Column Cleat |
| | SGBS25 | C250 Cast in Column Cleat |

| BASE CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  ALL CLEATS SIMILAR SIZE AND HOLE PLACEMENT MAY DIFFER | SGBS30 | C300 Cast in Column Cleat |
| | SGBS35 | C350 Cast in Column Cleat |

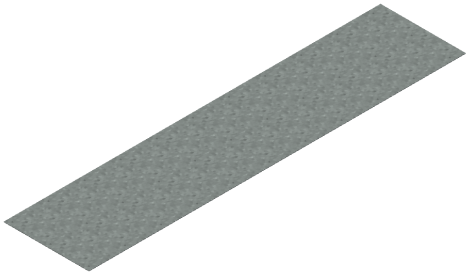
| FASCIA CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  ALL CLEATS SIMILAR SIZE AND HOLE PLACEMENT MAY DIFFER | JFC96_3 | Lower 3° Fascia Cleat |
| | JFC96_5 | Lower 5° Fascia Cleat |
| | JFC96_7.5 | Lower 7.5° Fascia Cleat |
| | JFC96 | Lower 10° Fascia Cleat |
| | JFC96_15 | Lower 15° Fascia Cleat |
| | JFC96_20 | Lower 20° Fascia Cleat |
| | BSFC96_10 | Upper 10° Fascia Cleat |
| | BSFC96 | Upper 7.5° Fascia Cleat |
| | BSFC96_5 | Upper 5° Fascia Cleat |
| | BSFC96_3 | Upper 3° Fascia Cleat |

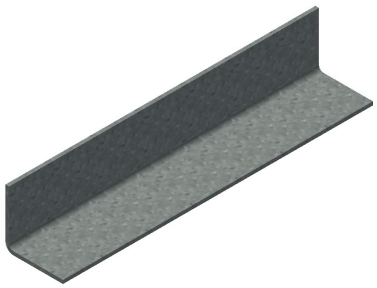
| PROFILE RESTRAINT CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  ALL CLEATS SIMILAR SIZE AND HOLE PLACEMENT MAY DIFFER | PR20 | Suit C200 |
| | PR25 | Suit C250 |
| | PR30 | Suit C300 |
| | PR35 | Suit C350 |

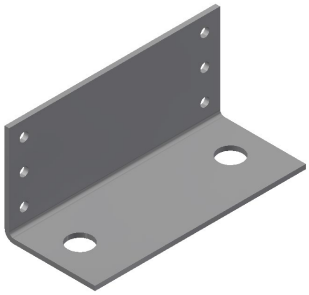
| GUSSET ZED STIFFENER | MARK | DESCRIPTION |
|---|---|---|
|  ALL CLEATS SIMILAR SIZE AND HOLE PLACEMENT MAY DIFFER | GZ20 | Knee Stiffener Cleat Suit C200 |
| | GZ25 | Knee Stiffener Cleat Suit C250 |
| | GZ30 | Knee Stiffener Cleat Suit C300 |
| | GZ35 | Knee Stiffener Cleat Suit C350 |

| BRACING CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  | CLRB16 | Rod Bracing End Cleat Suit R16 Rod |

| GUSSET ZED STIFFENER | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | CL20 | Knee Stiffener Cleat Suit C200 |

| GUSSET ZED STIFFENER | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL FLY BRACES SIMILAR<br>SIZE MAY DIFFER | BGFB15 | Fly Brace Suit C150 |
| | BGFB20 | Fly Brace Suit C200 |
| | BGFB25 | Fly Brace Suit C250 |
| | BGFB30 | Fly Brace Suit C300 |
| | BGFB35 | Fly Brace Suit C350 |

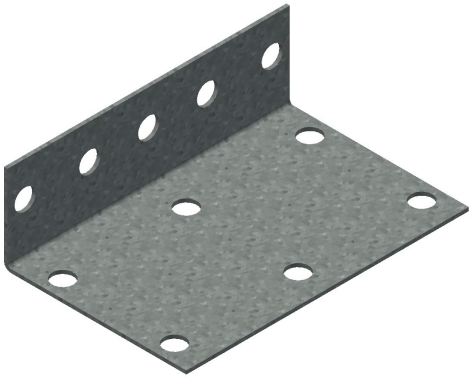
| END WALL COLUMN CAPS | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL COLUMN CAPS SIMILAR<br>SIZE MAY DIFFER | JEC350 | Various Col/Raft Combinations |
| | JEC400 | Various Col/Raft Combinations |
| | JEC450 | Various Col/Raft Combinations |
| | JEC500 | Various Col/Raft Combinations |
| | JEC550 | Various Col/Raft Combinations |
| | JEC600 | Various Col/Raft Combinations |
| | JEC650 | Various Col/Raft Combinations |
| | JEC700 | Various Col/Raft Combinations |

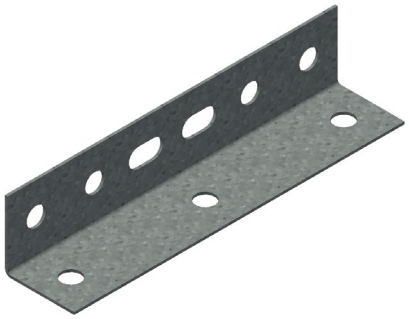
| MULLION BASE CLEATS<br>MULLION CAP CLEATS | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | MBC150 | Suits C150 Column / Mullion<br>Base / Cap suit up to 10° pitch |
| | MBC200 | Suits C200 Column / Mullion<br>Base / Cap suit up to 10° pitch |
| | MBC250 | Suits C250 Column / Mullion<br>Base / Cap suit up to 10° pitch |
| | MBC150L | Suits C150 Column / Mullion<br>Base / Cap suit over 10° pitch |
| | MBC200L | Suits C200 Column / Mullion<br>Base / Cap suit over 10° pitch |
| | MBC250L | Suits C250 Column / Mullion<br>Base / Cap suit over 10° pitch |

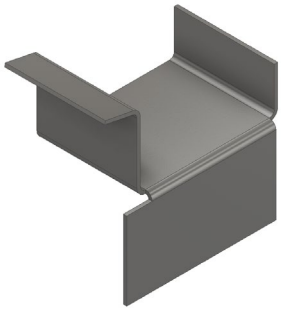
## Transfer Beam Cleats

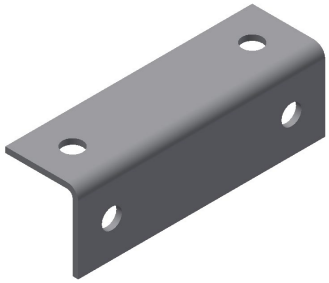
### General

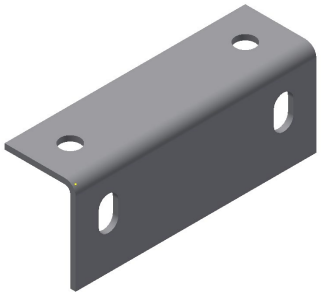
All transfer beam cleats should be supplied from Endurance suppliers with a part number for easy identification. The location of the cleats within the framing connection can be found in this assembly guide. Quantity of components can be referenced on the Bill of Materials.

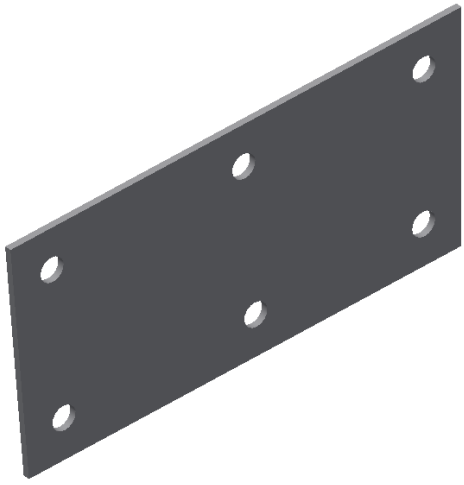
| TRANSFER BEAM TO RAFTER CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  ALL CLEATS SIMILAR SIZE AND HOLE PLACEMENT MAY DIFFER | TBC20 | C200 Transfer Beam to C200 Rafter Cleat |
| | TBC25 | C250 Transfer Beam to C250 Rafter Cleat |
| | TBC30 | C300 Transfer Beam to C300 Rafter Cleat |
| | TBC35 | C350 Transfer Beam to C350 Rafter Cleat |

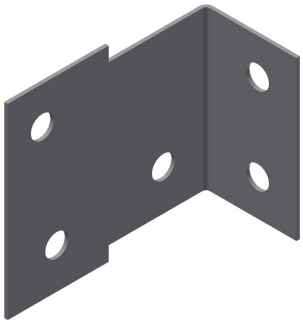
| TRANSFER BEAM CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  ALL CLEATS SIMILAR SIZE AND HOLE PLACEMENT MAY DIFFER | TRC25 | C250 Beam to C200 Truncated Rafter |
| | TRC30 | C300 Beam to C200/C250 Truncated Rafter |
| | TRC35 | C350 Beam to C200/C250 Truncated Rafter |
| | TBR3530 | C350 Beam to C300 Truncated Rafter |

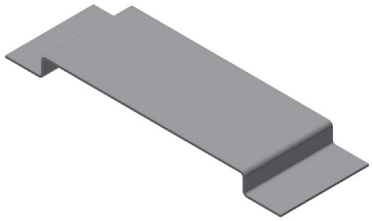
| TRANSFER BEAM CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  | JTS96 | Window Mullion Cleat |

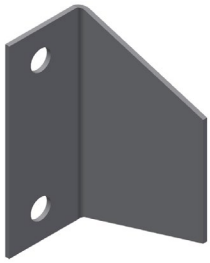
| ANNEXE PORTAL CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | BAC15 | Suits C150 Annexe Rafter to Parent Portal Column |
| | BAC20 | Suits C200 Annexe Rafter to Parent Portal Column |
| | BAC25 | Suits C250 Annexe Rafter to Parent Portal Column |

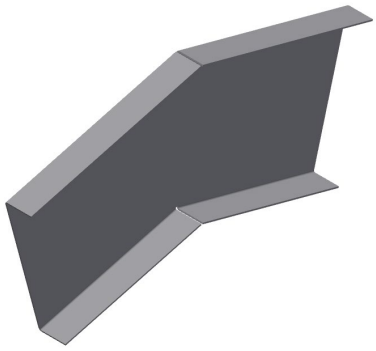
| ANNEXE END FRAME CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | BAEC15 | Suits C150 Annexe Rafter to Parent End Frame Column |
| | BAEC20 | Suits C200 Annexe Rafter to Parent End Frame Column |
| | BAEC25 | Suits C250 Annexe Rafter to Parent End Frame Column |

| ANNEXE RAFTER PLATE | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | BAP15_3 | Suits C150 Annexe Rafter 3° pitch |
| | BAP15 | Suits C150 Annexe Rafter 5° pitch |
| | BAP15_7.5 | Suits C150 Annexe Rafter 7.5° pitch |
| | BAP20_3 | Suits C200 Annexe Rafter 3° pitch |
| | BAP20 | Suits C200 Annexe Rafter 5° pitch |
| | BAP20_7.5 | Suits C200 Annexe Rafter 7.5° pitch |
| | BAP25_3 | Suits C250 Annexe Rafter 3° pitch |
| | BAP25 | Suits C250 Annexe Rafter 5° pitch |
| | BAP25_7.5 | Suits C250 Annexe Rafter 7.5° pitch |

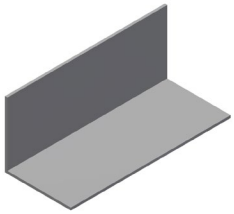
| OVERHANG FASCIA CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | **BGF_XXL** | Suits C150 fascia cleat<br>XX designates roof pitch |
| | **BGF_XXR** | Suits C150 fascia cleat<br>XX designates roof pitch |

| OVERHANG STRUT CLOSER CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | **BGOHC** | Suits C200 overhang strut<br>Closer cleat |

| OVERHANG STRUT CLOSER CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | **BGOHE** | Suits C150 end overhang<br>fascia |

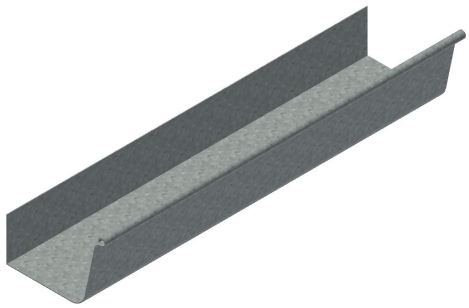
| END OVERHANG FASCIA APEX CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>ROOF PITCH MAY DIFFER | **NA15_XX** | Suits C150 end overhang fascia<br>XX designates roof pitch |

| CLAMP CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  | **CL29P** | Suits C150 end overhang fascia |

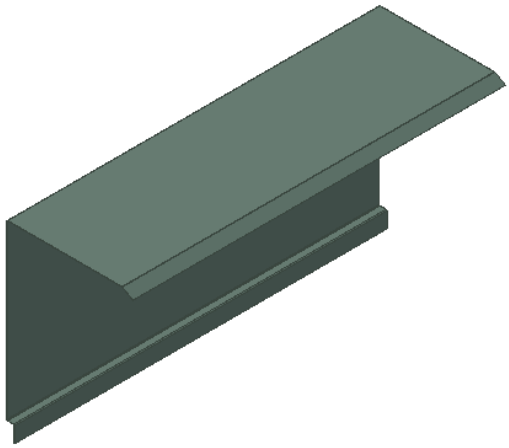
| CLAMP CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  | **NH10_5** | Suits C200 end overhang Strut to end fascia |

## Flashing Identification

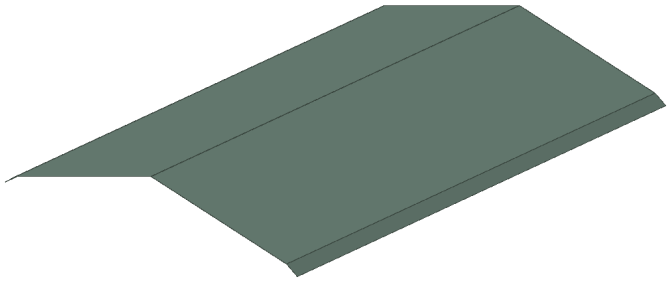
Images displayed below are typical and for visual identification only. RDS supplied flashings will be supplied for unique building use. All flashings and locations will be displayed on the printed RDS cladding drawings.



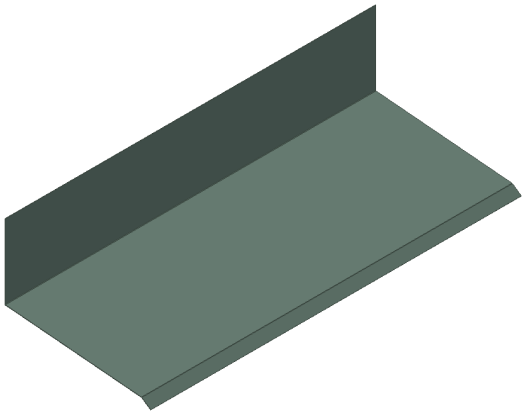
**QUAD, GUTTER**



**BARGE, SQUARE, HIGH PROFILE**
**BARGE, SQUARE, CORRUGATED**



**RIDGE FLASHING**



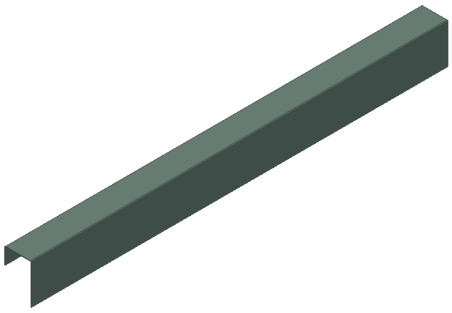
**FLASHING, APRON**



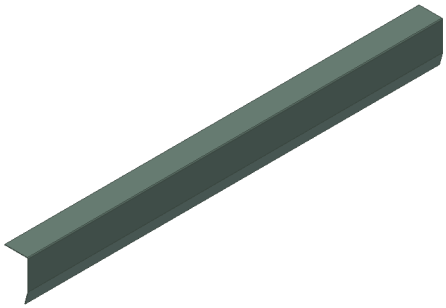
FLASHING, CORNER



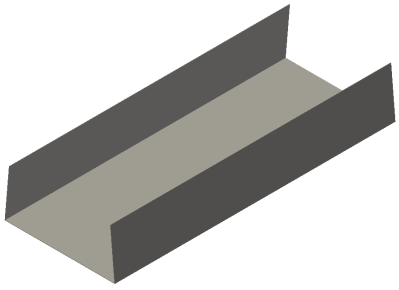
FLASHING, ROLLER
DOOR MULLION



FLASHING, SPECIAL
R.A. DOOR HEAD

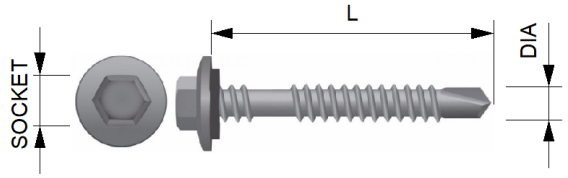


FLASHING,
PARTITION, CAP



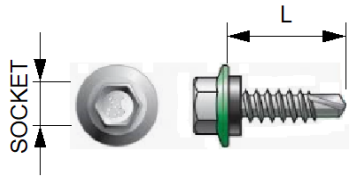
FLASHING, INTERNAL
R.A. DOOR HEAD

## Fasteners



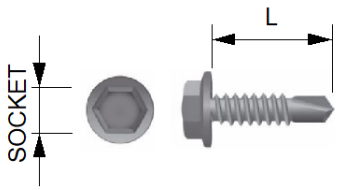

**ROOF CLADDING**
**GENERAL PURPOSE CREST FASTENER**

| Part No. | DIA | GAUGE-TPIxL | SOCKET |
|---|---|---|---|
| TEK23 | 5.5 | #12-14x35 | 5/16" |
| TEK24 | 5.5 | #12-14x45 | 5/16" |
| TEK28 | 6.3 | #14-10x50 | 3/8" |
| TEK29 | 6.3 | #14-10x65 | 3/8" |
| TEK41 | 5.5 | #12-14x50 | 5/16" |
| TEK42 | 5.5 | #12-14x50 | 5/16" |




**WALL CLADDING PAN FASTENER**

| Part No. | DIA | GAUGE-TPIxL | SOCKET |
|---|---|---|---|
| TEK1 | 4.9 | #10-16X16 | 5/16" |
| TEK16 | 6.4 | #14-10X25 | 5/16" |
| TEK4 | 5.5 | #12-14x35 | 5/16" |




**FRAMING FASTENER**

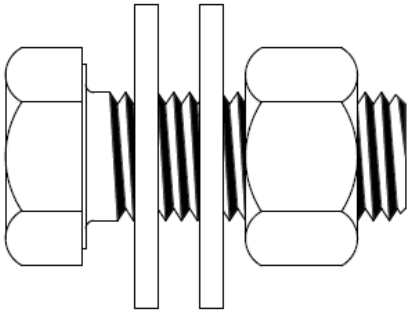
| Part No. | DIA | Gauge-TPIxL | Socket |
|---|---|---|---|
| TEK5 | 4.9 | #12-14X20 | 5/16" |
| TEK7 | 6.4 | #14-10X20 | 3/8" |
| TEK7A | 6.4 | #14-20X45 | 3/8" |
| TEK20 | 6.4 | #14-20X22 | 3/8" |



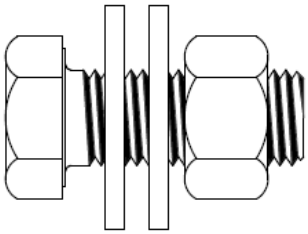
**TEK2**
#10-16x22 WAFER HEAD
PHILLIPS N°2 DRIVE BIT



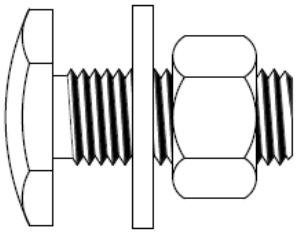
**TEK15**
#8-18x12 BUTTON HEAD
PHILLIPS N°2 DRIVE BIT



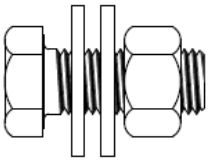
**HT6** - M16x40 HEX BOLT 8.8.S, ALWAYS USE WITH 2 W16 (Ø16 WASHER)



**HT2** - M12x55 HEX BOLT
**HT5** - M12x30 HEX BOLT 8.8.S
ALWAYS USE WITH **2 W12** (Ø12 WASHER)



**HEX2** - M12x30 HEX DOME HEAD BOLT COMPLETE WITH WASHER



**HEX10** - M8x25 HEX BOLT ALWAYS USE WITH 2 **W8** (Ø8 WASHER)




**DYNABOLT** MASONRY **ANCHOR**

| Part No. | DIA and Drill DIA | Nominal Length | Drill Depth |
|---|---|---|---|
| D8042 | 8 | 42 | 45 |
| D10040 | 10 | 40 | 45 |
| D12055 | 12 | 55 | 64 |
| D16060 | 16 | 65 | 70 |

# Tensioning Requirement
## Grade 8.8 Hi-Tensile Bolt

### Important Notes

All major connections (base, knee, apex, knee brace & rafter tie) in the Premier TH96 range rely on friction between adjoining surfaces to attain a rigid connection.

To achieve the necessary friction in the connection Grade 8.8 high tensile bolts and nuts are used and must be tensioned as noted below.

Either HT5 (M12 x 30) or HT6 (M16 x 40) bolts are used in these connections and may be identified by 8.8 stamped on the bolt head.

Numerous methods are used to tension high tensile bolts however, the simplest and most widely accepted method is to tighten the nut **"snug"** tight (the full effort of a person using a standard Podger spanner).

The nut and bolt are then marked as in Fig. A and extra rotation is applied to the nut to align the marks as in Fig. B.

As a rule of thumb "snug" tight plus one half turn of the nut is ample tension for the connection bolts.

Most erectors now use electric or pneumatic impact wrenches to apply tension to connection fasteners. Some brands have accessories for torque settings; however, if we set some bolts using the above method, they can be used as a guide and check for the torque setting on the impact wrench.

**Engineer's requirements for shank tensions:**
**For M12 HT bolts, Grade 8.8, shank tension is 50kN.**
**For M16 HT bolts, Grade 8.8, shank tension is 90kN.**

***Hi tensile Grade 8.8 bolts cannot be re-used once tensioned.***
***New hi-tensile grade 8.8 bolts, washers and nuts must replace previously used fasteners.***

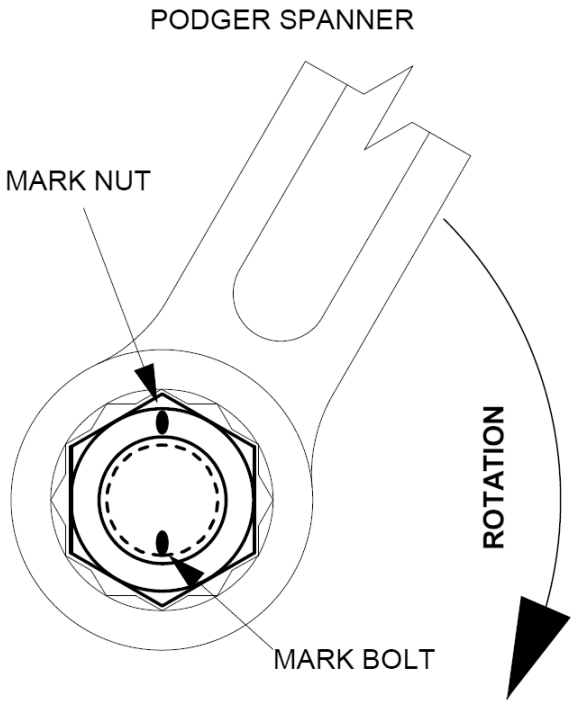


Fig. A

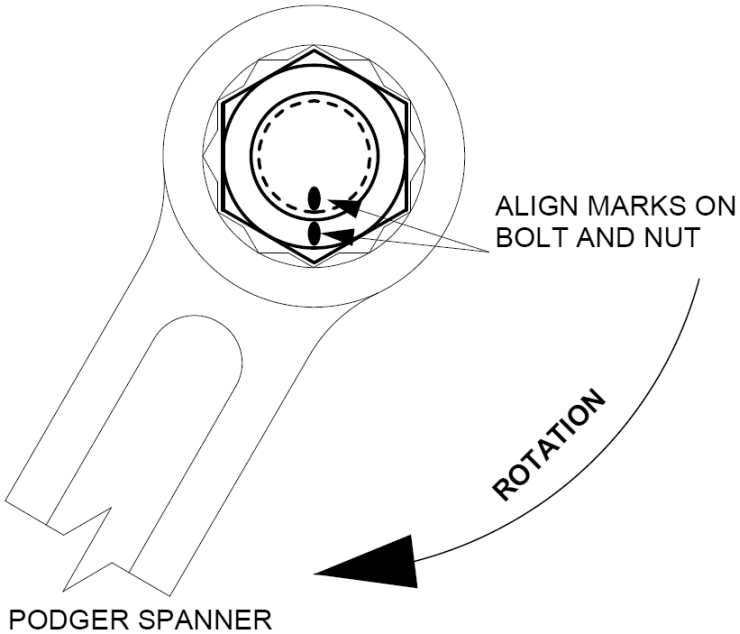


Fig. B

***IMPORTANT NOTE***
***Incorrect bolt tensions are the most common cause of building failure.***

# Mechanical Masonry Anchor Installation

**(Images courtesy of Ramset™)**

## Background

AS 1684 permits the use of proprietary masonry anchors for fixing bottom plates to concrete slabs. These fixings may be required for the purpose of resisting uplift forces at the ends of bracing walls and/or the tie-down of walls due to wind up lift.

## Preparation

When drilling the hole into masonry you should always refer back to the manufacturers 'Technical Manual' for precise details of how the work should be completed and what sized tools are required. For example by using the correct size tungsten/carbide tipped masonry drill bits you will ensure that the anchors will give optimum performance and avoid failure.

You should always drill the hole equal to or greater than the required embedment of the mechanical masonry anchor.

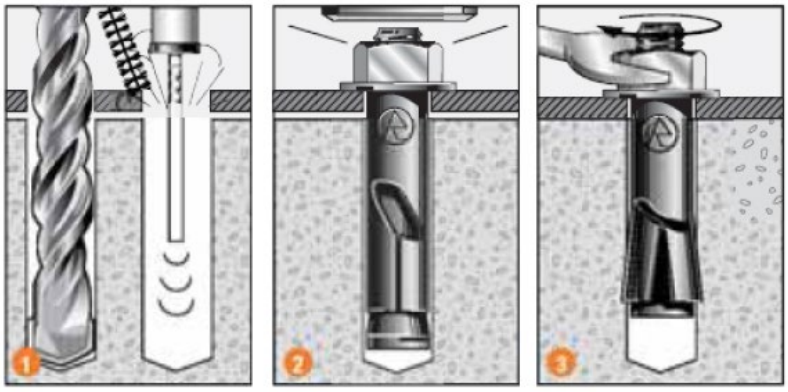
Many applications calls for drilling into base materials, a masonry drill will not remove all the clippings and dust (commonly called swarf) from the hole and unless you have completely cleaned out the hole, the mechanical masonry anchor could come to rest on this swarf and prevent the anchor from pulling down neatly onto the material to be fastened.

In most cases where product complaints have occurred one of the other installation steps have been ignored or performed incorrectly (usually the setting under rotary hammer action)

**Product and Installation details**

Please refer to the mechanical masonry anchor manufacturers 'Technical Manual' for complete product and installation details.

## Installation

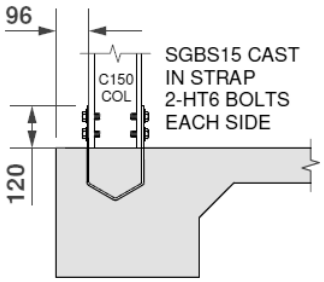



1. Use fixture as a template, drill a hole to the correct diameter and depth. Clean hole thoroughly with brush.
2. Remove debris by way of a vacuum or hand pump, compressed air, etc. Insert anchor tightly against fixture and tighten with spanner.
3. Continue tightening, allowing the sleeve to twist and pull down the fixture firmly onto the base material.

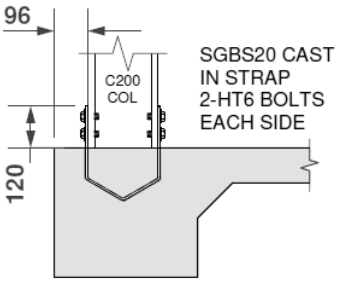
# Connections

## Column Base Connection

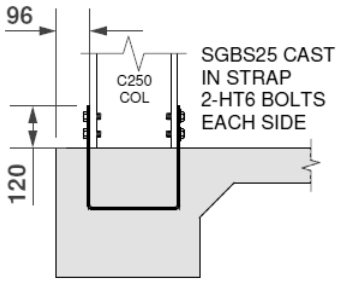
All main and corner columns are attached at the base end with a cast in concrete strap cleat. For C150, C200, C250 columns, the strap penetrates the floor surface by 120mm, and the column is fixed to the cleat with 2 x M16 x 40 hi-tensile bolts (HT6) on each flange with 2 M16 washers (W16) per bolt. For C300 or C350 columns, the strap penetrates the floor surface by 170mm, and each column is fixed with 3-HT6 per flange. The external surface of each column is off set from the perimeter of the Premier TH96 Shed by 96mm.



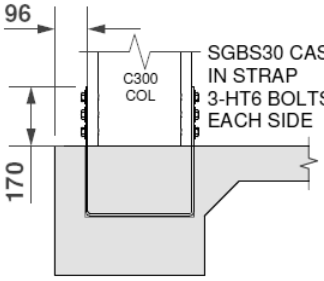

**C150 COLUMN BASE**



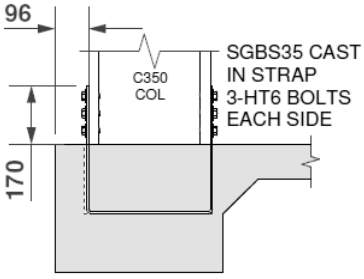

**C200 COLUMN BASE**




**C250 COLUMN BASE**



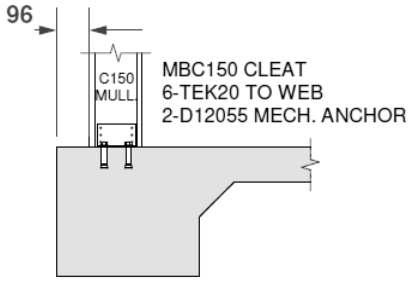

**C300 COLUMN BASE**



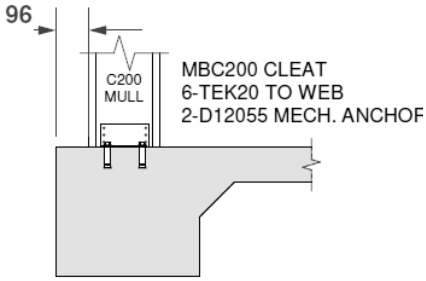

**C350 COLUMN BASE**

## Mullion Base Connection

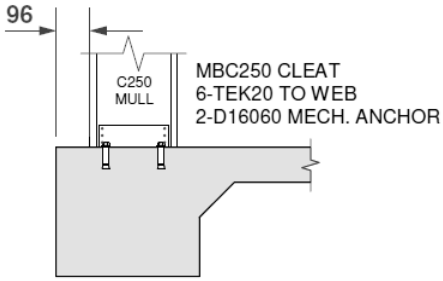
Mullions can be either intermediate end wall mullions or roller door mullion. The mullions are fixed to concrete surfaces with mechanical masonry anchors, and to base cleats with 6-#14 tek screws (Tek 7). All end wall mullion flanges are offset from the perimeter of the Premier TH96 Shed by 96mm. All cleats are fixed though mullions into cleats.



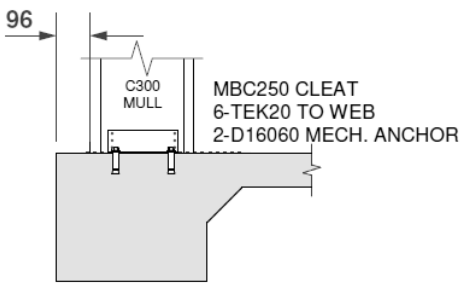

**C150 END WALL MULLION BASE**



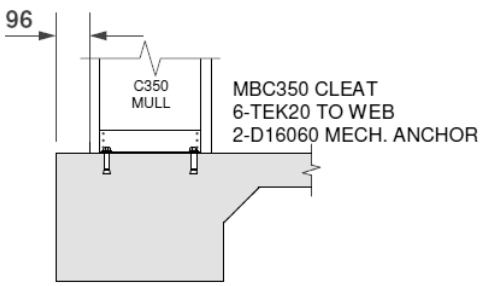

**C200 END WALL MULLION BASE**




**C250 END WALL MULLION BASE**



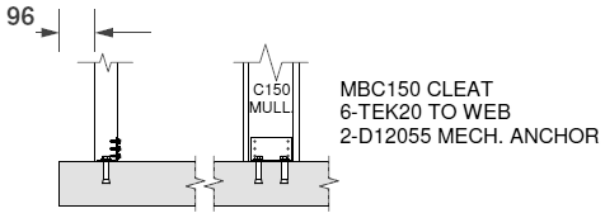

**C300 END WALL MIULLION BASE**



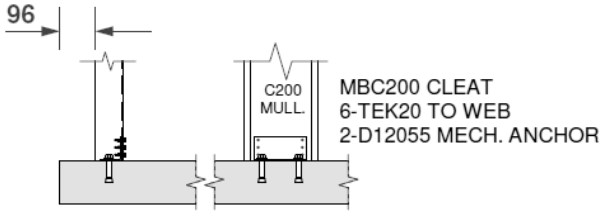

**C350 END WALL MULLION BASE**

## Roller Door Mullion Base Connection

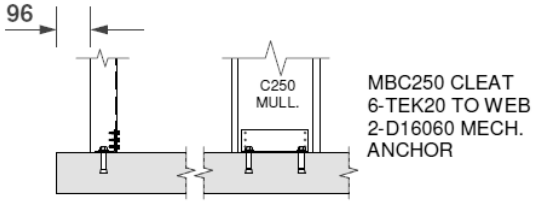
Roller door mullions are fixed to concrete surfaces with mechanical masonry anchor, and to base cleats with 6-#14 tek screws (Tek 7) and are similar end wall mullion base connections. All roller door mullion flanges are offset from the perimeter of the Premier TH96 Shed by 96mm. All base cleats are fixed with tek screws though mullions into cleats.



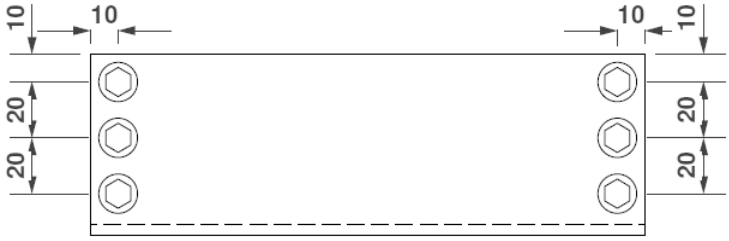

**C150 ROLLER DOOR MULLION BASE**




**C200 ROLLER DOOR MULLION BASE**



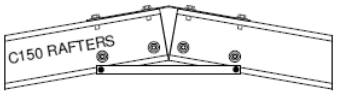

**C250 ROLLER DOOR MULLION BASE**




**TEK SCREW FASTENING PATTERN FOR ALL END WALL AND ROLLER DOOR MULLION BASE CLEATS (VIEWED FROM OUTSIDE OF MULLION)**

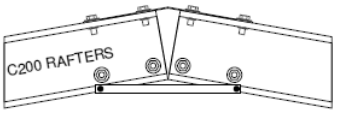
## Rafter Apex Connection

Rafter apex connections consist of a series of HT bolts and #14 tek screws.
All apex connections include 2 x Tek20 fine thread tek screws, which fix through the bottom lip of the apex cleat, and into the lower lip of each rafter.
For C150 rafters, use 8 M12 x 30 HT bolts (HT5)-4 HT5's through rafter web, 4 HT5's through rafter flanges.
For C200 rafters, use 8 M16 x 40 HT bolts (HT6)-4 HT6's through rafter web, 4 HT6's through rafter flanges.
For C250 rafters, use 10 M16 x 40 HT bolts (HT6)-6 HT6's through rafter web, 4 HT6's through rafter flanges.
For C300 rafters, use 12 M16 x 40 HT bolts (HT6)-8 HT6's through rafter web, 4 HT6's through rafter flanges.
For C350 rafters, use 12 M16 x 40 HT bolts (HT6)-8 HT6's through rafter web, 4 HT6's through rafter flanges.



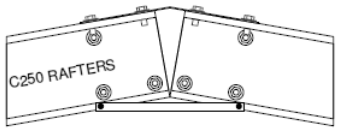

GA15 GUSSET
8-HT5 BOLTS
2-TEK20 THRU LIPS

**C150 APEX CONNECTION**



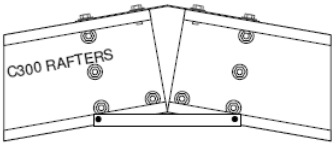

GA20 GUSSET
8-HT6 BOLTS
2TEK20 THRU LIPS

**C200 APEX CONNECTION**



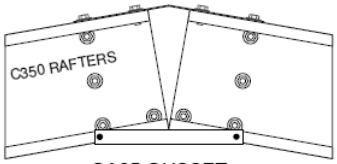

GA25 GUSSET
10-HT6 BOLTS
2-TEK20 THRU LIPS

**C250 APEX CONNECTION**




GA30 GUSSET
12-HT6 BOLTS
2-TEK20 THRU LIPS

**C300 APEX CONNECTION**




GA35 GUSSET
12-HT6 BOLTS
2-TEK20 THRU LIPS

**C350 APEX CONNECTION**

## Column to Rafter Knee Connection

All columns to rafter knee connections consist of a series of HT bolts and #14 tek screws.
All knee connections include Tek20 fine thread tek screws, which fix through the bottom lip of the knee cleat, and into the inner lip of each column or rafter.
Column and rafter connections consist of same size sections-with no variations, i.e., for a C150 column, the rafter must be a C150. Gauge variations will occur, but never section size variations.

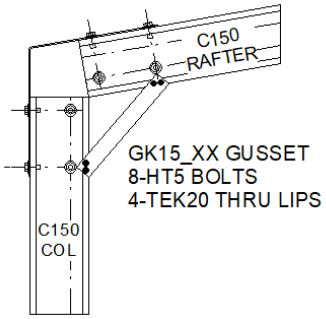
For C150 knees, use knee cleat GK15_XX, BGLK15_XX or BGUK15_XX, 8-M12 x 30 HT bolts (HT5)-2 per column web, 2 per rafter web, 2 per column flange, 2 per rafter flange, -2 x Tek 20 through column inner lip and 2 x Tek 20 through rafter inner lip.

For C200 knees, use knee cleat GK20_XX, BGLK20_XX or BGUK20_XX, 10-M16 x 40 HT bolts (HT6)-3 per column web, 3 per rafter web, 2 per column flange, 2 per rafter flange, - 3 x Tek 20 through column inner lip, 1 x TEK 20 on column outer lip, 3 x Tek 20 on rafter inner lip and 1 x Tek 20 through rafter outer lip. Locate a zed stiffener cleat (GZ20) under the column or rafter lips at 185mm from each end.

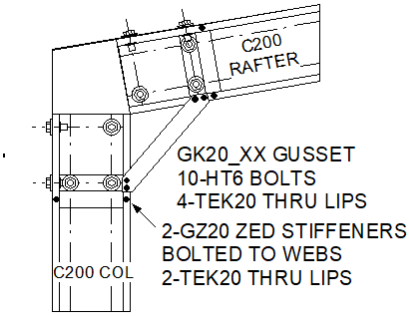
For C250 knees, use knee cleat GK25_XX, BGLK25_XX or BGUK25_XX, 10-M16 x 40 HT bolts (HT6)-3 per column web, 3 per rafter web, 2 per column flange, 2 per rafter flange, - 3 x Tek 20 through column inner lip, 1 x TEK 20 on column outer lip, 3 x Tek 20 on rafter inner lip and 1 x Tek 20 through rafter outer lip. Locate a zed stiffener cleat (GZ25) under the column or rafter lips at 185mm from each end.

For C300 knees, use knee cleat GK30_XX, BGLK30_XX or BGUK30_XX 12-M16 x 40 HT bolts (HT6)-4 per column web, 4 per rafter web, 2 per column flange, 2 per rafter flange, - 3 x Tek 20 through column inner lip, 1 x TEK 20 on column outer lip, 3 x Tek 20 on rafter inner lip and 1 x Tek 20 through rafter outer lip. Locate a zed stiffener cleat (GZ30) under the column or rafter lips at 185mm from each end.

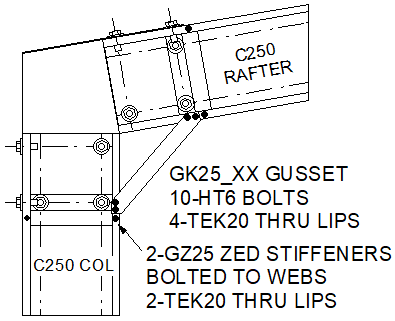
For C350 knees, use knee cleat GK35_XX, BGLK35_XX or BGUK35_XX 12-M16 x 40 HT bolts (HT6)-4 per column web, 4 per rafter web, 2 per column flange, 2 per rafter flange, - 3 x Tek 20 through column inner lip, 1 x TEK 20 on column outer lip, 3 x Tek 20 on rafter inner lip and 1 x Tek 20 through rafter outer lip. Locate a zed stiffener cleat (GZ35) under the column or rafter lips at 185mm from each end.



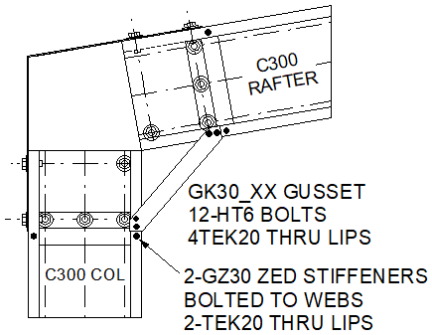

**C150 KNEE CONNECTION**
XX DENOTES PITCH



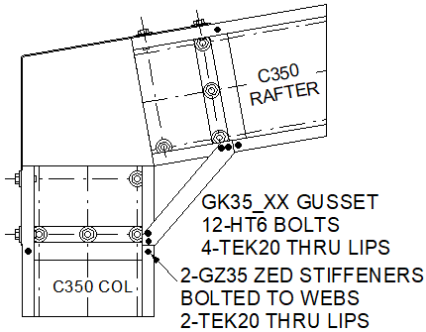

**C200 KNEE CONNECTION**
XX DENOTES PITCH




**C250 KNEE CONNECTION**
XX DENOTES PITCH




**C300 KNEE CONNECTION**
XX DENOTES PITCH



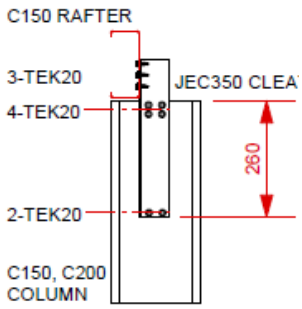

**C350 KNEE CONNECTION**
XX DENOTES PITCH

## End Wall and Partition Column Connections

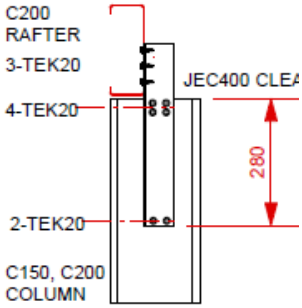
Rafter connections are Teked not bolted.
TEKS MUST BE SCREWED THROUGH THE SECTION INTO THE CONNECTION CLEAT.
2 extra Teks supplied per connection may be screwed through the cleat into the Cee section for location purposes but are not to be counted as a TEK in the structural connection.

## End Wall and Partition Column Rafter Connections

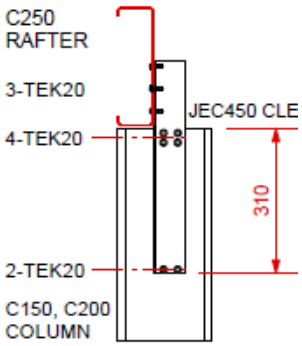
a) Frame lips must always face the sheeted side.
b) Column flange must always be located flush with frame lips.
c) Either Duragal angle or RHS cleats are used with the lower section located inside the column and the upper section against the rafter web.
d) Teks to be located and grouped generally in the pattern shown in detail with the first Teks 10mm in from end of cleat or end of column.



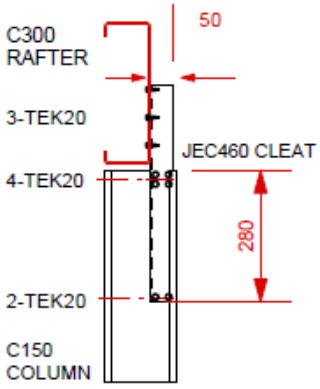

**C150, C200 COLUMN C150 RAFTER**



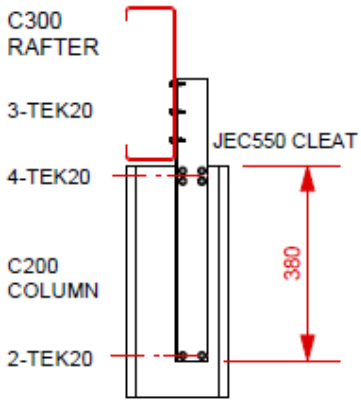

**C150, C200 COLUMN C200 RAFTER**



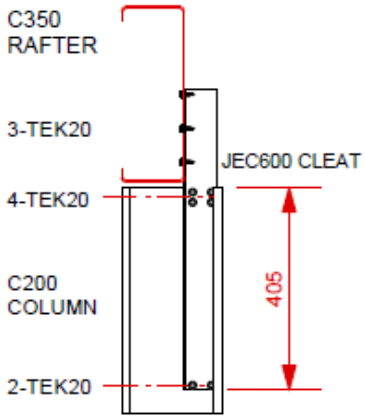

**C150, C200 COLUMN C250 RAFTER**




**C150 COLUMN TO C250 RAFTER**



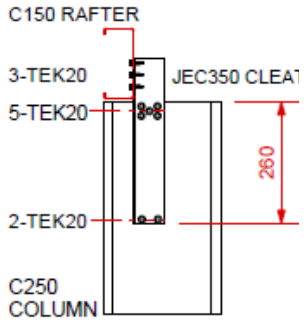

**C200 COLUMN C300 RAFTER**



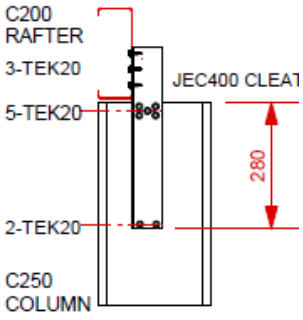

**C200 COLUMN C350 RAFTER**

NOTE!
9-TEK20 REQUIRED FOR RAFTER CONNECTION OF ALL C150 AND C200 COLUMNS.

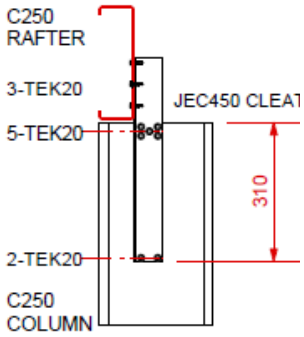
NOTE!
10-TEK20 REQUIRED FOR RAFTER CONNECTION OF ALL C250 COLUMNS.



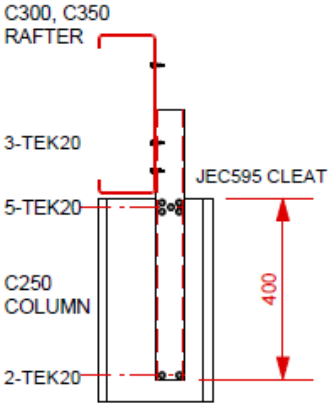

**C250 COLUMN**
**C150 RAFTER**



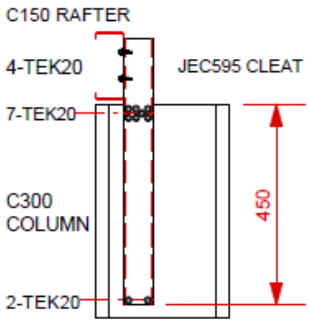

**C250 COLUMN**
**C200 RAFTER**



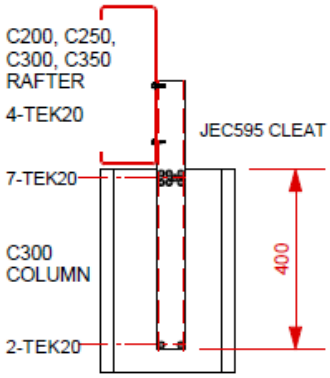

**C250 COLUMN**
**C250 RAFTER**




**C250 COLUMN**
**C300, C350**
**RAFTER**




**C300 COLUMN**
**C150 RAFTER**

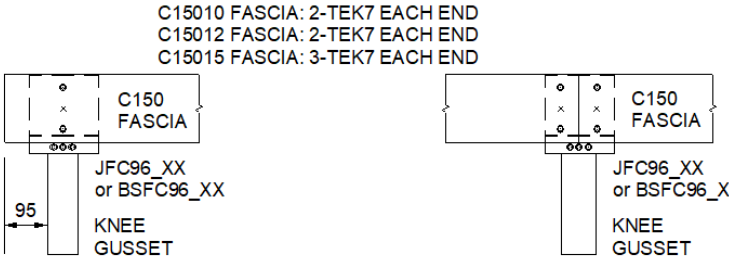



**C300 COLUMN**
**C200, C250, C300, C350**
**RAFTER**

NOTE!
13-TEK20 REQUIRED FOR RAFTER
CONNECTION OF ALL
C300 COLUMNS

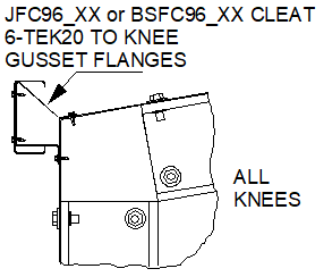
## Fascia Connection

All Premier TH96 Shed fascia's consist of C150 rolled sections that are unpunched. Fascia cleats - JFC96_XX or BSFC96_XX - are tek screwed to knee cleats with a total of 6-Tek7 tek screws through pilot holes in JFC96_XX or BSFC96_XX. XX denotes roof pitch and will be included 3°, 5°, 7.5°, 10° and 15° pitches.
C150 fascia channels are self-locating for height and are simply hung over the fascia cleats. Fascia channels do not overlap and are simply butted together. On side wall corners, the fascia channels will extend 95mm further past the outer column flange.
For C15010 & C15012 fascia channels, use 2 x Tek7's through fascia web into fascia cleat each end.
For C15015, C15019 & C15024 fascia channels use 3 x Tek7's through fascia web into fascia cleat each end.




**END FRAME**
XX DENOTES PITCH

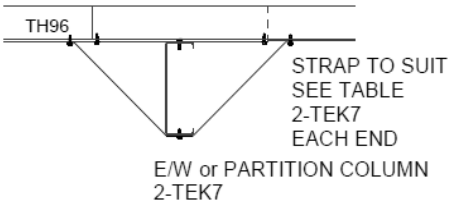
**INTERNAL FRAME**
XX DENOTES PITCH




**END or INTERNAL FRAME KNEE**
XX DENOTES PITCH

## Lateral Brace Connection (Fly Brace)

Lateral braces are supplied without section stabilizers on gable end walls or partition walls only. The locations of these braces are indicated as "LB" on the Steelwork Marking Plan.



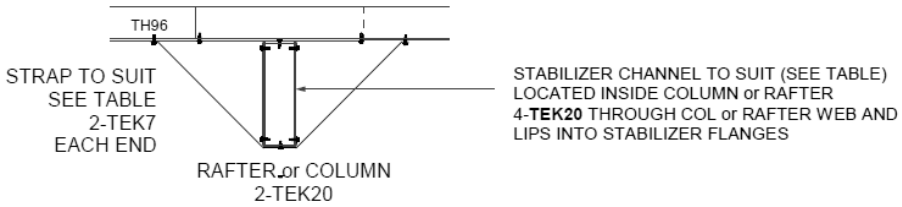

**LATERAL BRACE**

| FRAME SECTION | BRACE STRAP | STRAP LENGTH | STABILIZER CHANNEL |
|---|---|---|---|
| C150 | BGFB15 | 450 | N/A |
| C200 | BGFB20 | 580 | PR20 |
| C250 | BGFB25 | 700 | PR25 |
| C300 | BGFB30 | 820 | PR30 |
| C350 | BGFB35 | 970 | PR35 |

## Section Stabilizer Connection

Section stabilizers are essential to achieve design performance of the main frame sections by restricting deformation in the high stress areas. Failure to comply with these details may result in frame failure. Locations of Section Stabilizers are shown as SS1 on the "Steelwork Marking Diagram". Lateral braces "BGFB... are used with stabilizer channels "PR.." at these connections.

Section Stabilizers are not required on C150 frames. Section Stabilizers are only used on Clearspan internal frames, with a total of **six** stabilizers per Clearspan frame.
A Section Stabilizer is located on each column at the first batten **down** from the knee. Two Section Stabilizers are located on each rafter, 1 at the first batten **up** from the knee and 1 at the 2nd batten **down** from the ridge. Section Stabilizer channels should be located inside the column and rafter before bolting the knee and apex cleats.



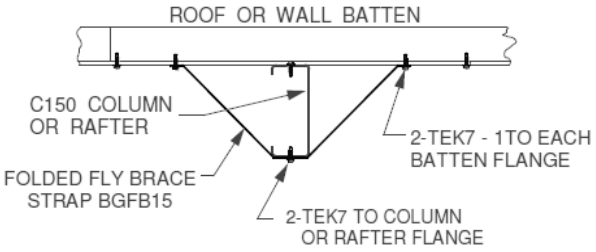

**SECTION STABILIZER**

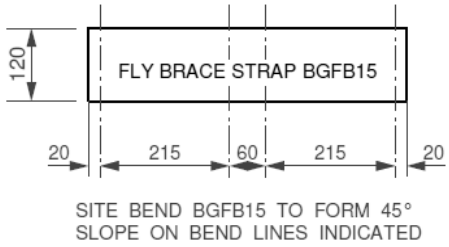
## Fly Braces

### General

Fly Braces are used to restrain main frame columns and rafters and end wall columns from rotating under bending loads. They consist of a thin 120mm wide strap Tek screwed to the inner flange of the column or rafter and the inner flanges of a Top Hat crossing over it. They are supplied as a flat strap and need to be roughly bent as shown below before fitting.
See the engineering drawing for your Premier TH96 Shed for nominal locations of Fly Braces.

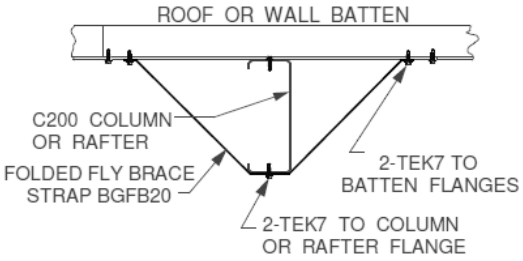
**FLY BRACE CONNECTION FOR C150 MEMBERS**

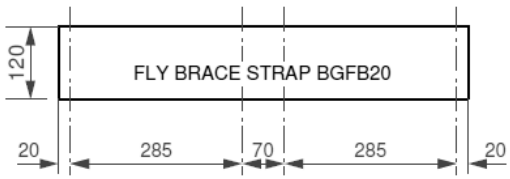



SITE BEND BGFB15 TO FORM 45°
SLOPE ON BEND LINES INDICATED

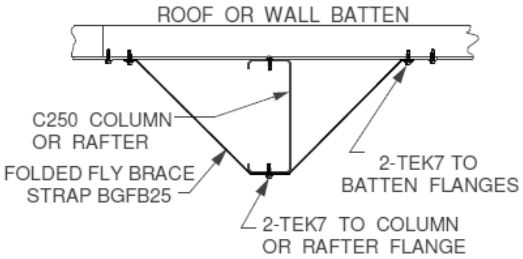
**FLY BRACE CONNECTION TO SUIT C200 MEMBERS**

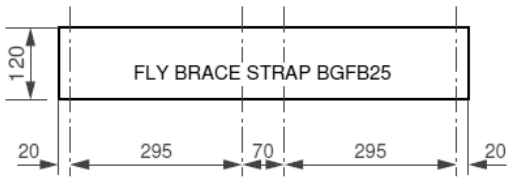



SITE BEND BGFB20 TO FORM 45°
SLOPE ON BEND LINES INDICATED

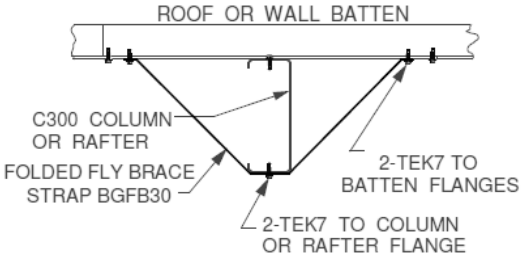
**FLY BRACE CONNECTION TO SUIT C250 MEMBERS**

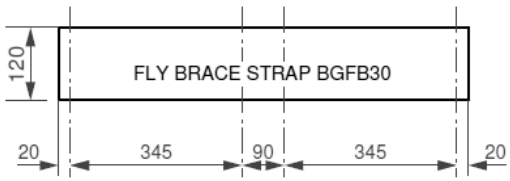



SITE BEND BGFB25 TO FORM ANGLE
SLOPE ON BEND LINES INDICATED

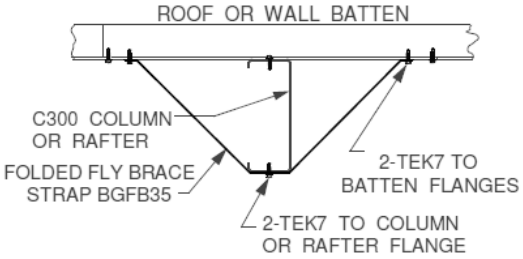
**FLY BRACE CONNECTION TO SUIT C300 MEMBERS**

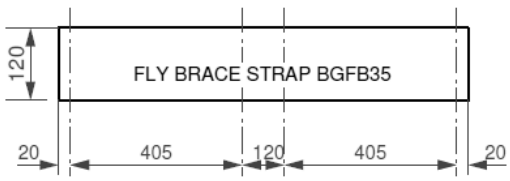



SITE BEND BGFB30 TO FORM ANGLE
SLOPE ON BEND LINES INDICATED

**FLY BRACE CONNECTION TO SUIT C350 MEMBERS**

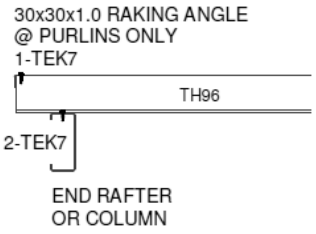


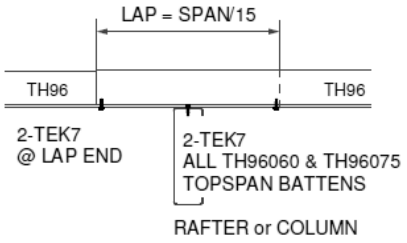

SITE BEND BGFB35 TO FORM ANGLE
SLOPE ON BEND LINES INDICATED

## Batten To Member Connection

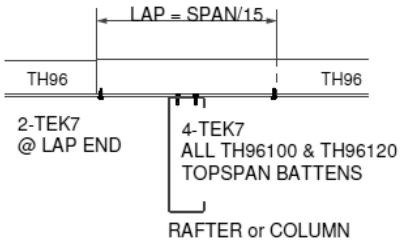
All battens on Premier TH96 Sheds are 96mm high, and may be supplied in 4 thicknesses - 0.60, 0.75, 1.0 & 1.2mm. For fixing to frame members, use 2-Tek7 screws for 0.60 & 0.75mm thick battens, and 4-Tek7 tek screws for 1.0 & 1.2mm thick battens. All batten laps are 15% of span (structural column or rafter spacing). Lapped connections have 2-Tek7 screws through batten flanges at each end of the lap. Since all end walls on the Premier TH96 Sheds have a setback frame configuration, all end bay battens will extend 95mm past the outer flange of each corner column or end frame rafter. In this instance, a 30 x 30 x 1.0mm raking angle is supplied to fix the gable end wall sheeting to. Fix the raking angle through the top of the roof battens with 1-Tek7.




**END FRAME CONNECTION**



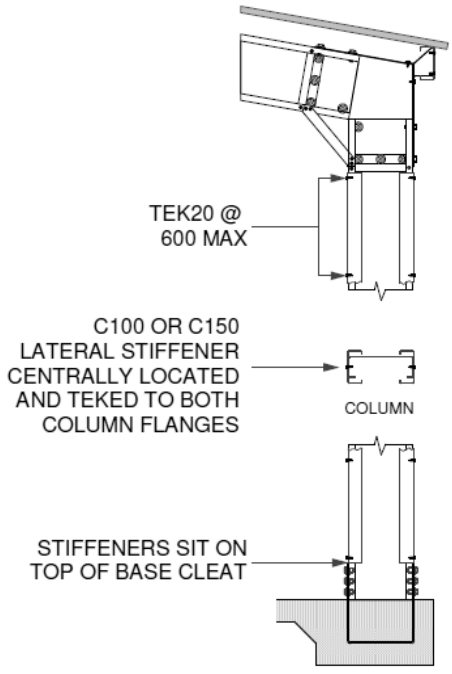

**LAPPED CONNECTION TH96060, TH96075**



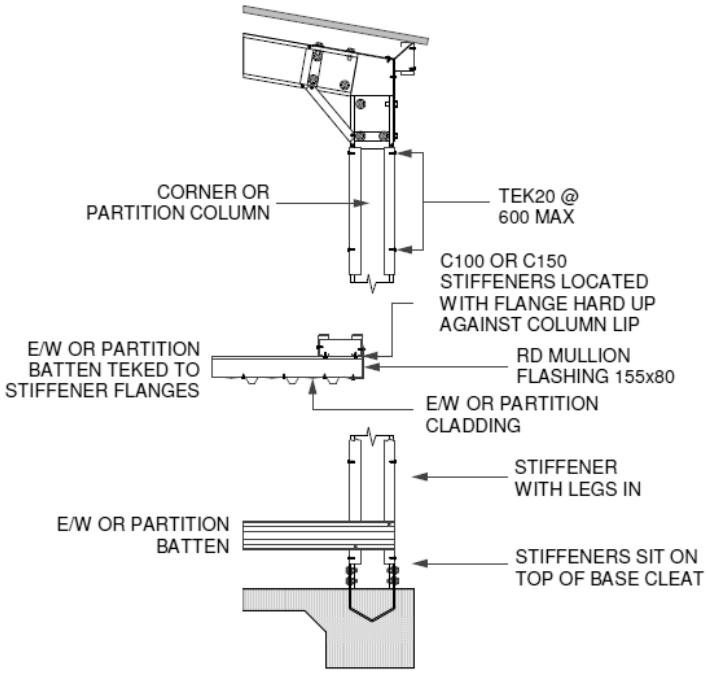

**LAPPED CONNECTION TH96100, TH96120**

## Column Lateral Stiffener Connection

Column lateral stiffeners are used to give lateral stability to free standing columns, which are simply defined as not having any side wall battens attached. The columns can include main Clearspan and partition columns (C1), and end wall corner columns (C2). At each location, two lateral stiffeners are required at each freestanding column-one stiffener fixed to each flange.
Stiffeners are located on each column flange by sitting on top of the column cast in strap and extend to the underside of the column-rafter knee cleat. Fixing is with 1-Tek20 tek screw at 600mm maximum centres. For C150, C200 or C250 columns, lateral stiffeners are ex C10010. For C300 or C350 columns, lateral stiffeners are ex C15010.




**MAIN FRAME COLUMN STIFFENER**

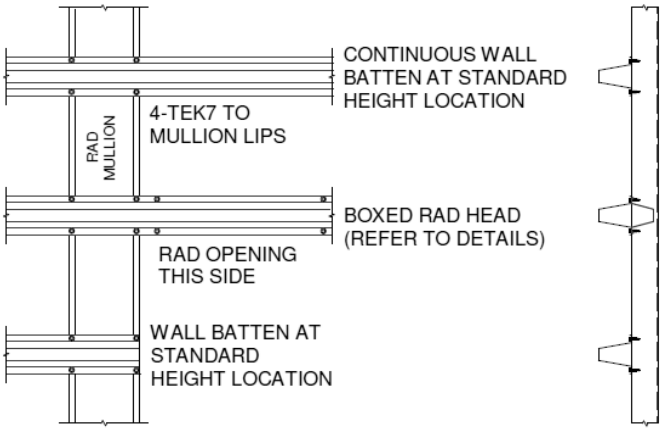



**CORNER OR PARTITION COLUMN STIFFENER**

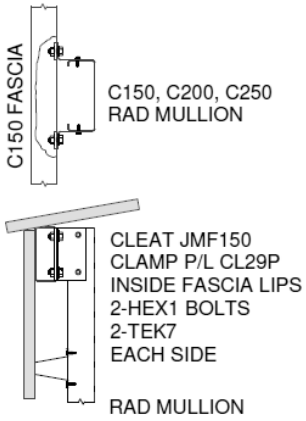
## Roller Door Mullions

### Roller Door Framing General

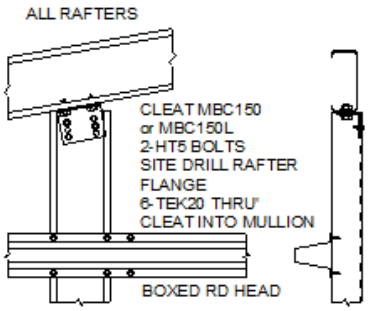
All roller door framing configurations are of "setback" type, where wall battens are fixed externally to the door mullions, and not in-between.
Each roller door will have its own separate mullions. No shared mullion option is available, nor is using the corner column as a door mullion option available.
For Series "A" & "AA" roller doors, all mullions will be unpunched C150's, with variations in thickness only.
For Series "B" roller doors, all mullions will be unpunched C200's, with variations in thickness only.
For Series "B" roller doors with wind locks, all mullions will be unpunched C250's, with variations in thickness only.
Roller door heads are a composite section made up of a 96mm batten teked to outside of mullions, with an internal 64mm batten fixing to the external batten.
On side walls, all roller door mullions extend to the side wall fascia purlin.
On end walls, all roller door mullions extend to the underside flange of the end frame rafter.



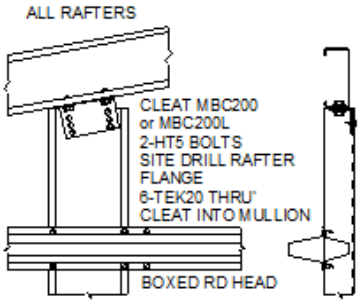

**ROLLER DOOR MULLION TO BATTEN CONNECTION**



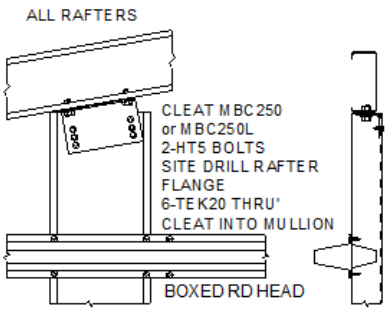

**ROLLER DOOR MULLION TO FASCIA CONNECTION**




**C150 RD MULLION TO RAFTER CONNECTION**




**C200 RD MULLION TO RAFTER CONNECTION**




**C250 RD MULLION TO RAFTER CONNECTION**

## Roller Door Heads

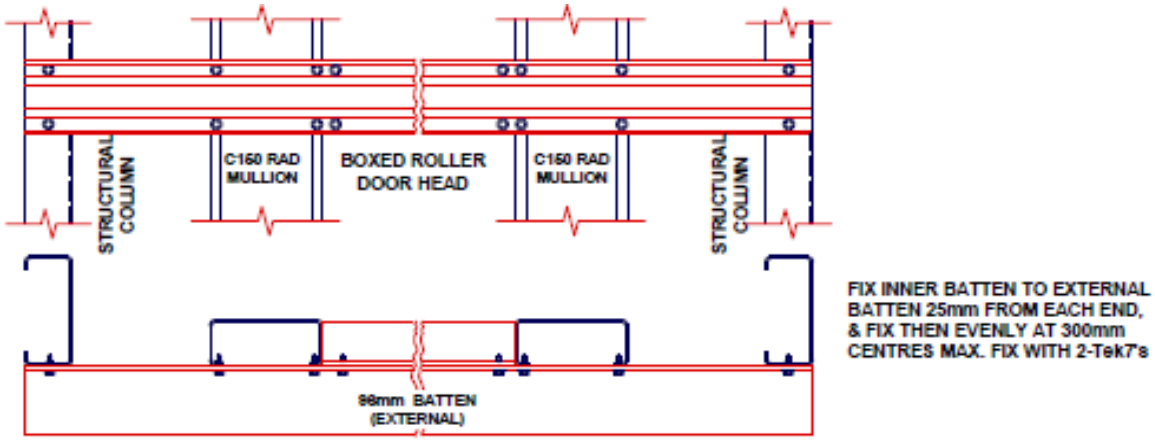
All roller door framing configurations are of "setback" type, where wall battens are fixed externally to the door mullions, and not in-between.

Roller door heads are comprised of an external 96mm Top Hat batten, and an internal 64mm batten that fixes between the roller door mullions.

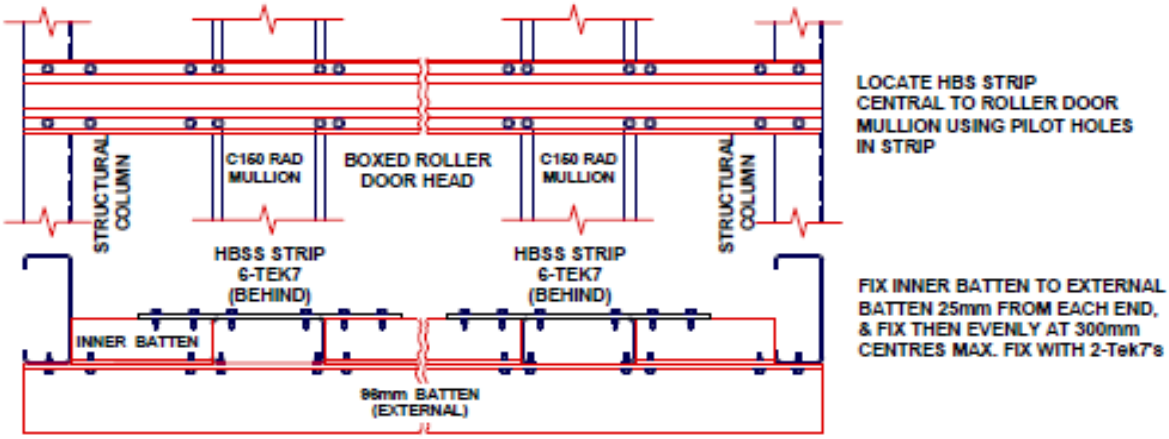
In all cases, the external 96mm that forms the roller door head extends from structural column to structural column. The structural column may be either a main frame column, corner column, partition wall column, or an end wall mullion.

Variations to the roller door head will be limited to the inner 64mm Top Hat batten. In most cases, the inner batten will locate between the inner flanges of the roller door mullion. Simply, the length of the inner batten is equal to the length of the roller door clear opening. However, in some instances, additional boxing battens may be required to fit to the external batten. These additional battens will extend from the outer roller door mullion flange, and to the adjacent structural column.

Where these additional battens are required, a flat strip will be needed to fix to the inner boxing batten, the outer boxing batten, and the roller door mullion. This will result in a continuous beam that extends from structural column to structural column.

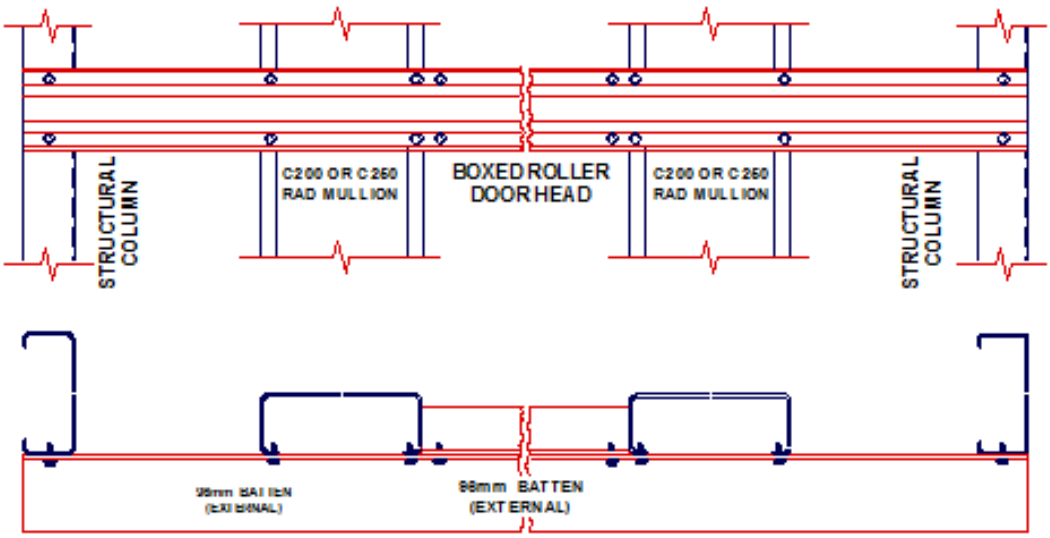



**C150 ROLLER DOOR MULLION HEAD ARRANGEMENT WITHOUT ADJACENT BATTENS**

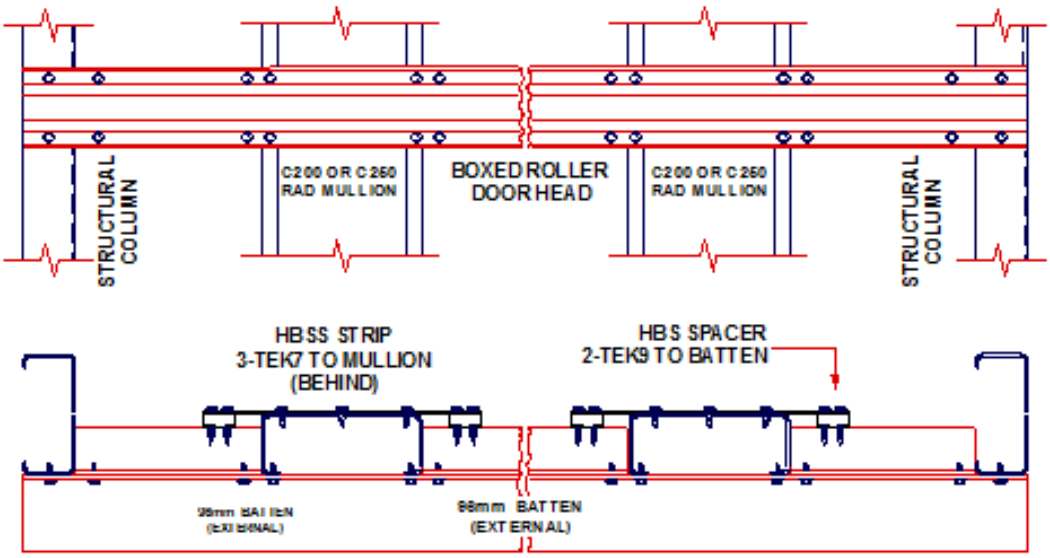



**C150 ROLLER DOOR MULLION HEAD ARRANGEMENT WITH ADJACENT BATTENS**

## Roller Door Heads (continued)




**C200/C250 ROLLER DOOR MULLION HEAD ARRANGEMENT WITHOUT ADJACENT BATTENS**




**C200/C250 ROLLER DOOR MULLION HEAD ARRANGEMENT WITH ADJACENT BATTENS**

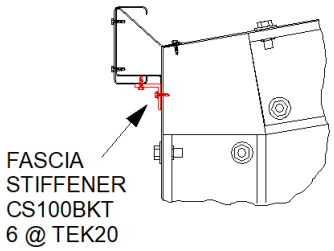
## Bracing

### Strap "X" Bracing General

Three different widths of bracing strap 35, 65 and 120mm may be supplied depending on size of building wind loading etc.
Each width has different end connections as detailed below.
Strap may have to be cut from one coil. The length allowed for each complete set of "X" bracing is shown on the Bill of Materials. This length includes a little extra.
Straps are Teked at the end to the outer flange of columns and rafters and to the inner flanges of all wall and roof battens they pass under.
Connect one end with one Tek to allow rotation, lightly tension and Tek opposite end with one Tek. Similarly Tek 2nd strap in position with one Tek at each end. Check for squareness, adjust if necessary and add the required number of Teks at each end.

**ROOF STRAP "X" BRACING**

Tek end to the high end of rafter immediately below the ridge batten and to the eaves cleat of the adjacent rafter at the other end.
At roof strap bracing ends that connect to the fascia, the fascia will require an additional stiffening cleat (CS100BKT) which connects to the underside of the fascia with 3-Tek20's and to the knee cleat with 3-Tek20's.



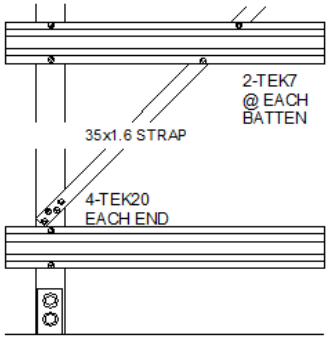

**END or INTERNAL FRAME KNEE**

**SIDE WALL STRAP "X" BRACING**

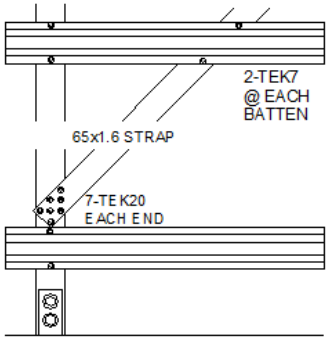
Tek end to the base of column immediately above the bottom batten and to the eaves cleat immediately below the fascia cleat of the adjacent column at the other end.

**END WALL STRAP "X" BRACING**

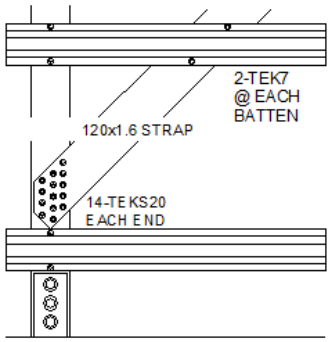
Tek end to the base of end wall column immediately above the bottom batten and to the top flange of the rafter as close as possible to the top of adjacent column. Strap has to be folded over rafter flange.




**TYP CONNECTION 35mm STRAP**



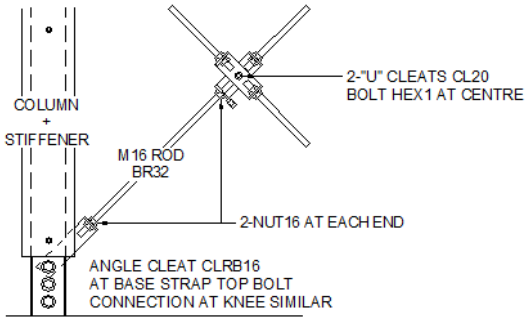

**TYP CONNECTION 65mm STRAP**




**TYP CONNECTION 120mm STRAP**

## Rod "X" Bracing

Rod "X" bracing is only used in side bays of buildings with no side walls or insufficient clad walls to fit the required number of strap braces.
Rod "X" bracing kit comprises of 4 angle cleats for connection to column flanges, 2 "U" cleats for centre cross over and 4-M16x3250mm long rods with nuts. Cut rod length to suit on site.
The long leg of angle cleats is bolted to the outer flange of columns at the upper base cleat bolt and the lower knee cleat bolt. The short leg should face back in towards column centre.

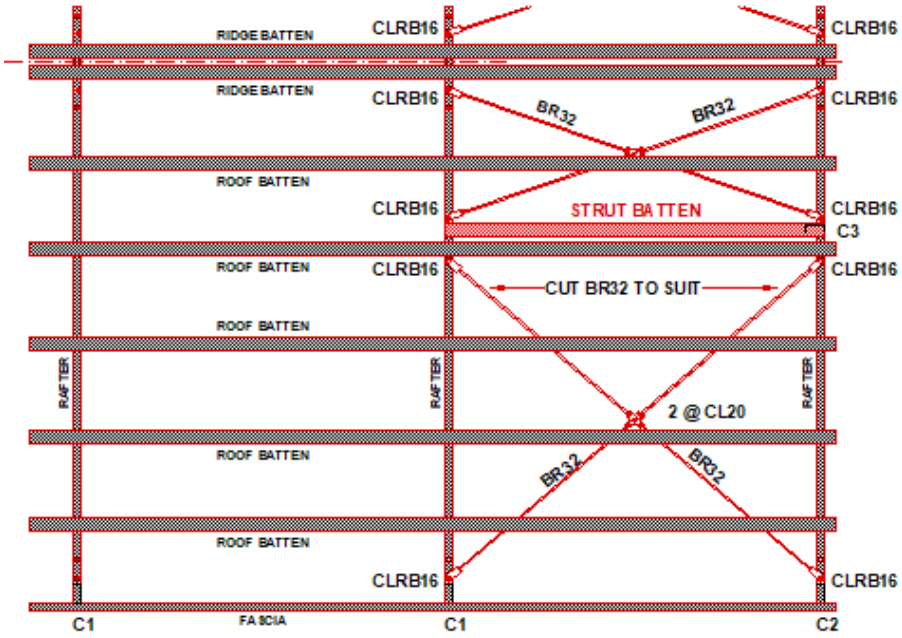



**TYP ROD BRACING ARRANGEMENT**
**LOOKING FROM INSIDE BUILDING**

## Strut Purlins / Roof Battens

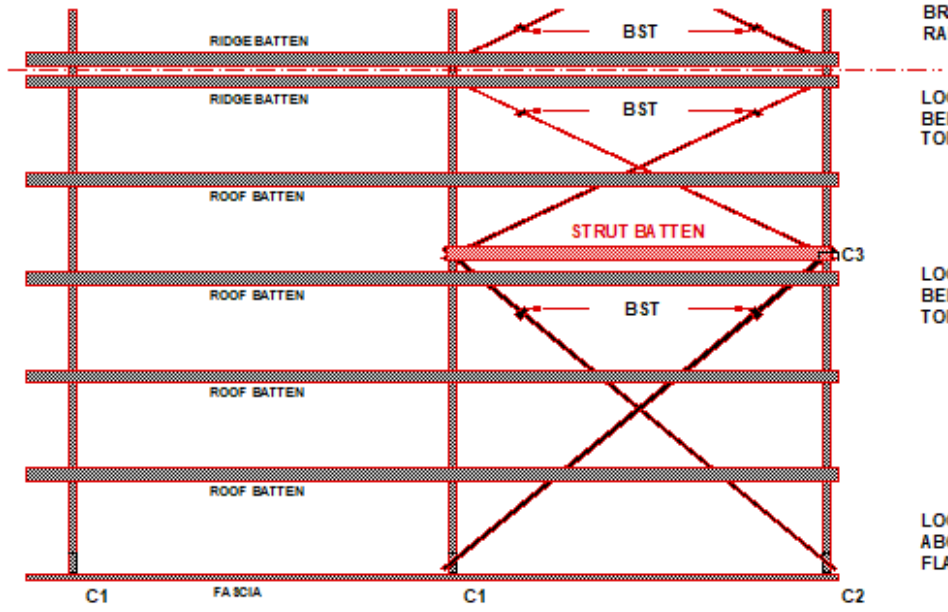
Strut purlins or strut battens are a compression member and are only required when multiple roof bracing units are present.
The strut is located typically at end wall column locations (C3) and spans between the end wall column / rafter to the adjacent bay rafter and runs parallel to the roof battens.
Strut fixing is similar to all batten other fixing.
The strut is fixed to the top of the rafters with minimum 2 #14 Teks each end for non-cyclonic. and 4 #14 Teks each end for cyclonic areas.
Roof sheeting is not required to be fixed to the strut purlin.
The strut may be required for either rod or strap bracing depending on engineering requirements.
Below are examples of both roof rod bracing and roof strap bracing with the bracing strut located.
The below examples are similar for the skillion Premier.
.

### ROD BRACING ROOF STRUT




WHERE PREPUNCHED HOLES ARE NOT AVAILABLE FOR CONNECTION OF CLEATS SGBR1 DRILL Ø13 HOLES FOR BOLT HT5 SO THAT CLEAT IS GENERALLY LOCATED AS SHOWN BUT AS CLOSE AS REASONABLE TO THE ADJACENT BATTEN OR FASCIA.

### STRAP BRACING ROOF STRUT




BRACING STRAP OVER RAFTERS AND UNDER BATTENS

LOCATE UPPER END OF STRAP JUST BELOW RIDGE BATTEN AND TEK TO TOP FLANGE OF RAFTER

LOCATE UPPER END OF STRAP JUST BELOW STRUT BATTEN AND TEK TO TOP FLANGE OF RAFTER

LOCATE LOWER END OF STRAP JUST ABOVE FASCIA AND TEK TO TOP FLANGE OF KNEE CLEAT

## Transfer Beams

### General

Transfer Beams spanning 2 bays allow the removal of a main frame column to a side wall producing an opening greater than the maximum bay size or the fitting of wider roller doors than would normally be possible.

The beam ends are connected to adjacent rafters approximately 780mm in from the fascia channel with angle cleats and M16 grade 8.8 bolts. This allows fitting of roller door rolls up near the roof sheeting between the beam and fascia and thus increasing allowable head height.

The rafter at the central frame is supplied truncated to suit and is connected to the centre of the beam with an angle cleat and M16 grade 8.8 bolts.

A heavier fascia channel is supplied to span the 2 bays.

Additional roof bracing is always required.

Major members and bracing are shown and identified on the steelwork marking diagram.

Footing requirements are shown on the relevant concrete drawings.

### Rules

Beams are supplied to allow side wall column centre spacing between the maximum bay size of 5420mm and 6500mm.

Beams may only be added at 2 equal size bays.

Minimum bay size = 2710mm, Maximum Bay size = 3250mm.

Beam can be the same size section or a larger section than the truncated rafter but is never a smaller section.

Beam toes always face down the roof slope towards the fascia.

C150 fascia channel is continuous over the 2 bays considered.

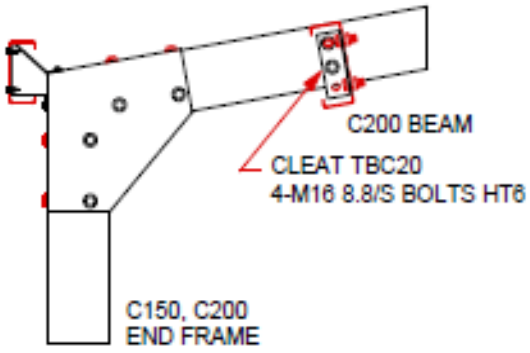
An additional bridging angle is located at mid span between the fascia and beam:

a) If the beam bay is open.

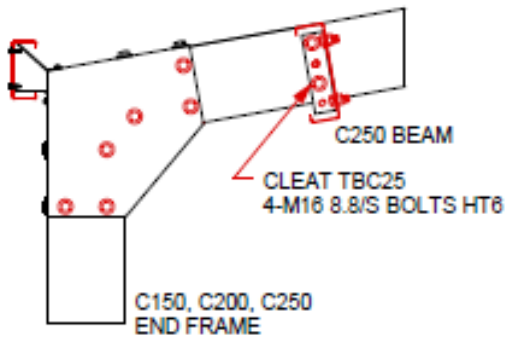
b) If the batten spacing at eaves is less than 750mm.

### Beam End Connections to End Rafter

The beam end connection to end frame rafters is to the web side of the channel. Bolt the cleat short leg to the rafter and bolt the beam to the holes closest to the bend in the cleat long leg.



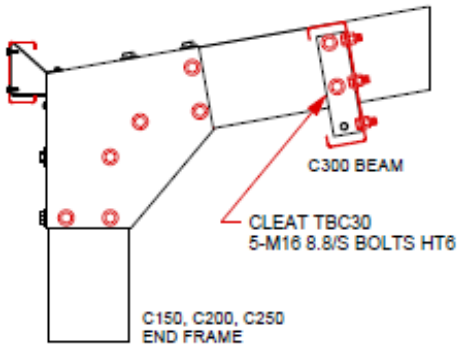

**C200 BEAM**
**C150, C200 END FRAME**



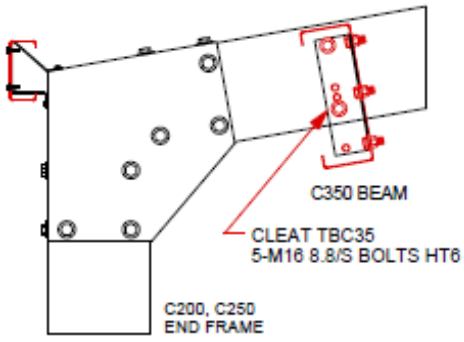

**C250 BEAM**
**C150, C200, C250 END FRAME**

## Transfer Beams (continued)

### Beam End Connections to End Rafter (Cont'd)



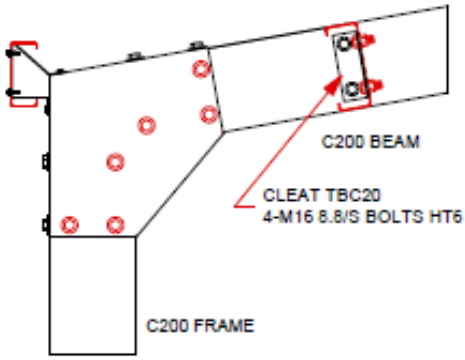

**C300 BEAM**
**C150, C200, C250 END FRAME**



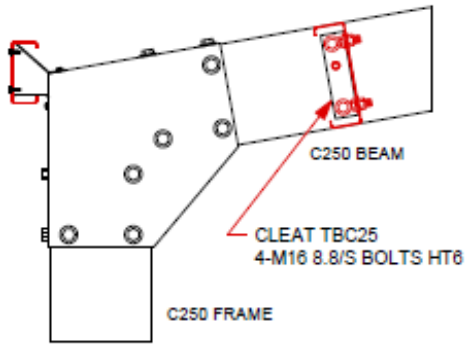

**C350 BEAM**
**C200, C250 END FRAME**

### Beam End Connections to Main Internal Rafter

The beam end connection to internal frame rafters may be to the web or the toe side of the channel on same size sections only. If beam and rafters are different section sizes, beam cleat must fix to the rafter's flat outer web. ORIENTATION OF THE RAFTER MUST BE CONSIDERED PRIOR TO FRAME ASSEMBLY.
For web connection bolt the cleat short leg to the rafter and bolt the beam to the holes closest to the bend in the cleat long leg.
For toe connection bolt the cleat short leg to the rafter and bolt the beam to the holes furthest from the bend in the cleat long leg.

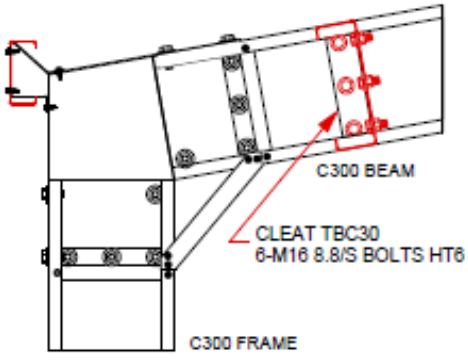



**C200 BEAM, C200 FRAME**

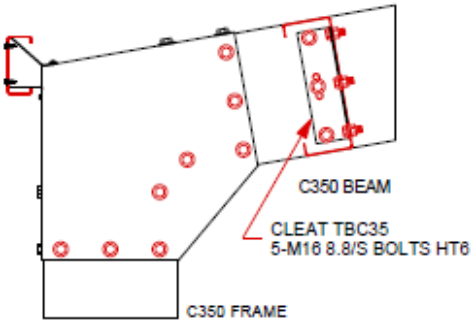



**C250 BEAM, C250 FRAME**

**NOTE! BEAMS MAY BE CONNECTED TO EITHER TOE OR WEB SIDE OF INTERNAL RAFTERS**



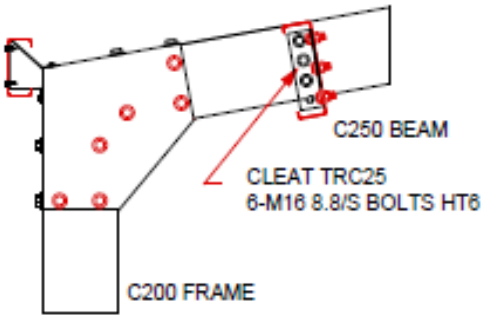

**C300 BEAM, C300 FRAME**



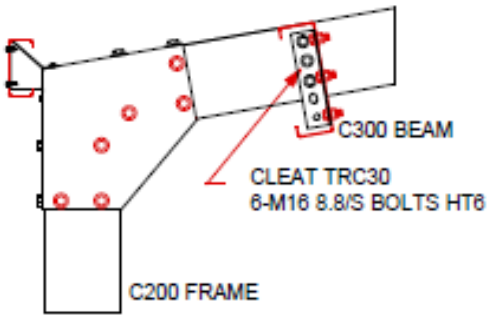

**C350 BEAM, C350 FRAME**

## Transfer Beams (continued)

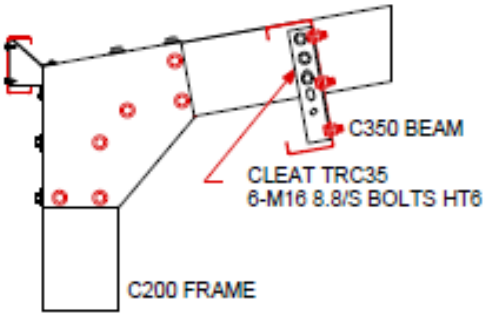
### Beam End Connections to Main Internal Rafter (Cont'd)



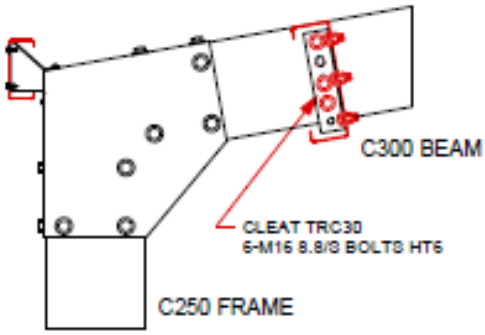

**C250 BEAM, C200 FRAME**



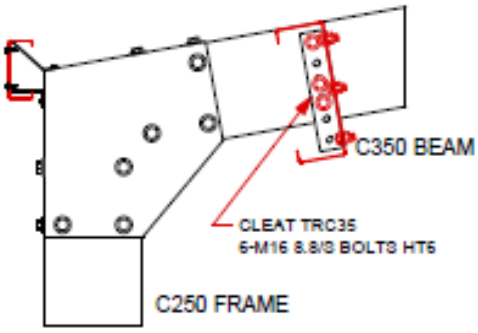

**C300 BEAM, C200 FRAME**



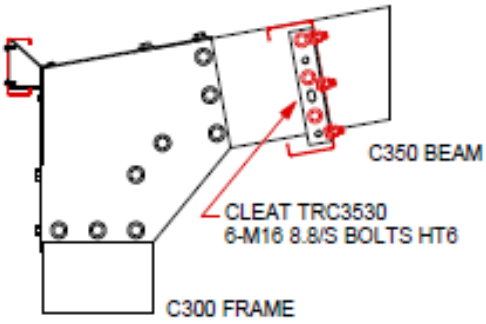

**C350 BEAM, C200 FRAME**




**C300 BEAM, C250 FRAME**



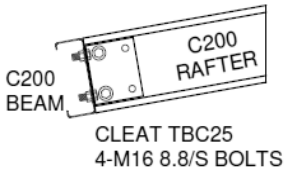

**C350 BEAM, C250 FRAME**



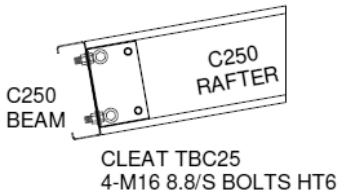

**C350 BEAM, C300 FRAME**

## Transfer Beams (continued)

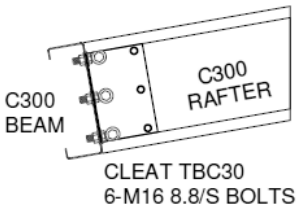
### Truncated Rafter Connections to Transfer Beam



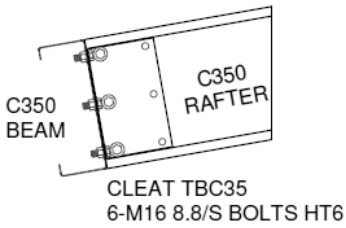

**C200 TRUNCATED RAFTER**
**C200 TRANSFER BEAM**



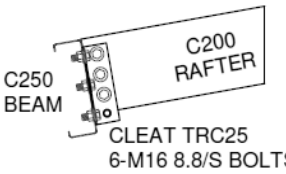

**C250 TRUNCATED RAFTER**
**C250 TRANSFER BEAM**



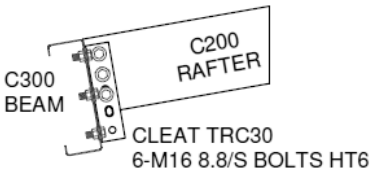

**C300 TRUNCATED RAFTER**
**C300 TRANSFER BEAM**



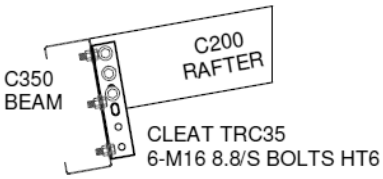

**C350 TRUNCATED RAFTER**
**C350 TRANSFER BEAM**



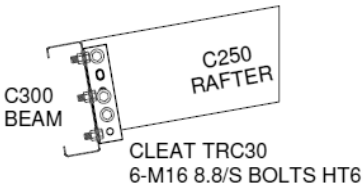

**C200 TRUNCATED RAFTER**
**C250 TRANSFER BEAM**



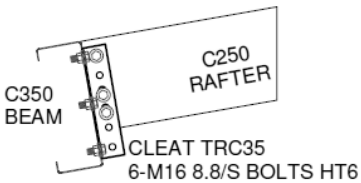

**C200 TRUNCATED RAFTER**
**C300 TRANSFER BEAM**



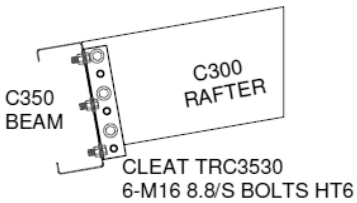

**C200 TRUNCATED RAFTER**
**C350 TRANSFER BEAM**




**C250 TRUNCATED RAFTER**
**C300 TRANSFER BEAM**



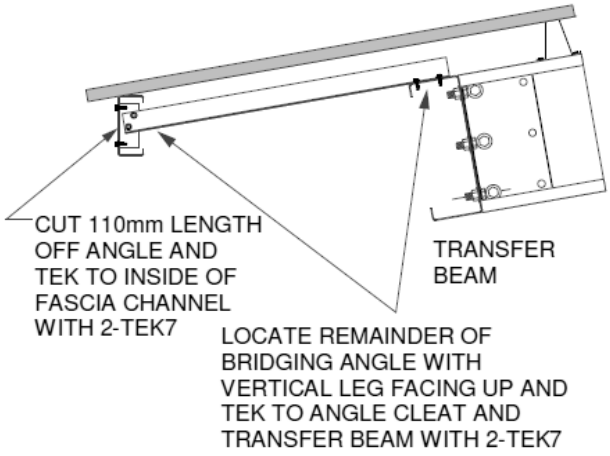

**C250 TRUNCATED RAFTER**
**C350 TRANSFER BEAM**



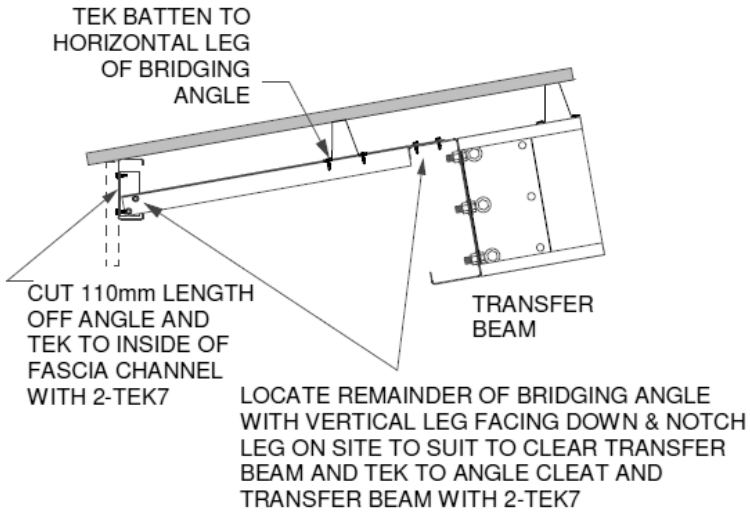

**C300 TRUNCATED RAFTER**
**C300 TRANSFER BEAM**

## Transfer Beams (continued)

### Bridging Arrangements




**BRIDGING KIT ARRANGEMENT WHEN BATTEN SPACING AT EAVES IS 750mm. OR GREATER OPEN BEAM BAY ONLY**




**BRIDGING KIT ARRANGEMENT WHEN BATTEN SPACING AT EAVES IS LESS THAN 750mm OPEN OR SHEETED BEAM BAY**

## Transfer Beams (continued)

### Typical Construction Procedure

Obtain and read all erection booklets and generated drawings including Bill of Materials, Steel Frame Marking Diagrams, Cladding Diagrams, Engineering Drawings and Concrete Footing Drawings.

Before starting check footings for accuracy. Any slab sizes or cast in cleat locations that vary more than 5mm from drawings are likely to cause problems in construction & the final appearance of the building.

Unpack building, identify members, cleats fasteners etc., check for accurate supply against the Bill of Materials and stack in areas to suit the construction procedure.

Erect and securely prop the full frames at either side of the truncated frame. These frames should be checked for column squareness, apex height etc. and all bolts fully tensioned before the next step.

Assemble truncated frame including the cleat at end of truncated rafter. See preceding connection details for correct cleat and orientation. Bolts should only be "snug" tight at this stage.

Bolt Transfer Beam cleats to the adjacent frame rafters. See preceding connection details for correct cleats and orientation. Bolts should only be "snug" tight at this stage. This can be done before standing of frames.

Raise Transfer Beam with the toes facing down the slope towards the fascia and hook top flange over cleats. Bolt Beam to cleats, snug tight at this stage.

Stand truncated frame and bolt rafter to beam. Fit fascia channels on opposite side to beam and at least the two ridge battens to stabilize the frame.

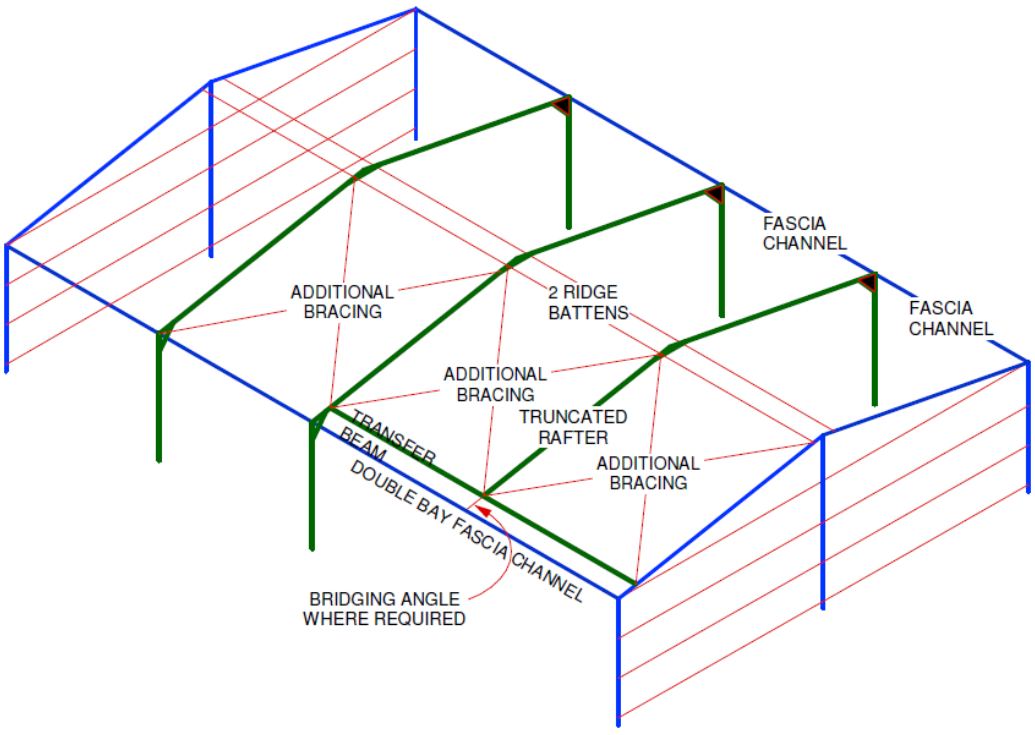
Fit the long fascia channel at double bay adjacent beam.

Make sure the truncated frame lines up with the other frames. Truncated frame profile can be adjusted within limits by loosening bolts, propping under ridge, moving beam up or down slope etc. Fully tension all bolts after adjustment.

Fit Bridging Angle if required in accordance with preceding details.

Additional roof strap bracing is required in the beam bay and adjacent bays. Ensure that this bracing is fitted in accordance with the Steel Frame Marking Plan before proceeding with construction.

Continue erecting the Premier TH96 Shed in accordance with the Premier TH96 Assembly Guide




**SCHEMATIC LAYOUT OF TYPICAL TRANSFER BEAM FRAMING**

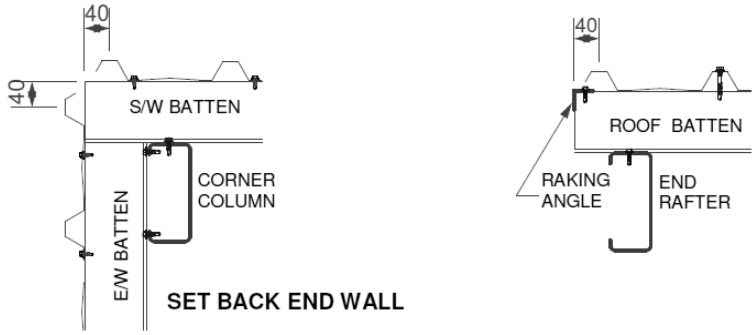
# Roof and Wall Cladding

## General

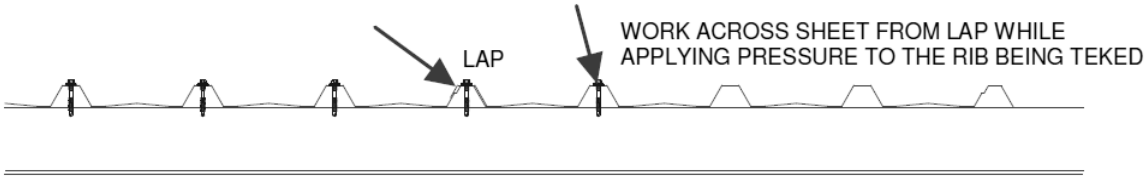
1) Check frame for squareness before and during fixing of wall cladding - no adjustment can be made later.
2) Avoid fixing wall and roof sheeting in windy conditions.
3) Always fix wall sheets before fixing roof sheets.
4) Lay sheets towards the prevailing bad weather conditions so that the overlapping edge is facing away from the direction of worst wind and rain.




5) Always start fixing sheets with centre of rib 40mm from the end of steel framework for both wall and roof sheeting with the aim of finishing with the centre of a rib 40mm from the opposite end.

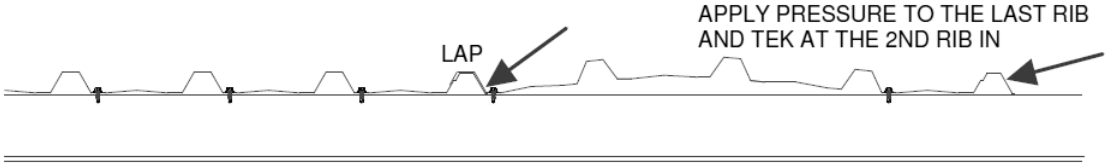



6) As there is a manufacturing tolerance on the width of all sheeting, a little play in the lapped joints and flexibility in the rib areas checks should be made at least every 4th sheet to ensure that sheets are square and not creeping too far away from the correct pitch.
   To check for squareness simply measure from the edge (at ends) of the last sheet fixed to the closest frame. Wall sheeting may also be checked for vertical with a spirit level.
   To check for correct sheet pitch measure from the 1st rib (40mm in from end) to the last rib of the last sheet.
   The dimension should be the number of sheets multiplied by 760. e.g. If 6 sheets have been fixed the dimension should be close to 6x760 = 4560mm. If this dimension varies by more than 10mm adjustments should be made when fixing the next few sheets.
   Sheets can be **"spread"** by taking up any slack in the rib joint and applying pressure to the ribs while Teking from the lap across towards the sheet edge.




**SPREADING TECHNIQUE** (ROOF SHOWN)

   Sheets can be **"shrunk"** by taking up any slack in the rib joint and Teking at the lap and then the 2nd rib from edge while applying as light pressure to the edge of sheet so that centre tends to bow out. The sheet can then be fixed with the remaining Teks.




**SHRINKING TECHNIQUE** (WALL SHOWN)

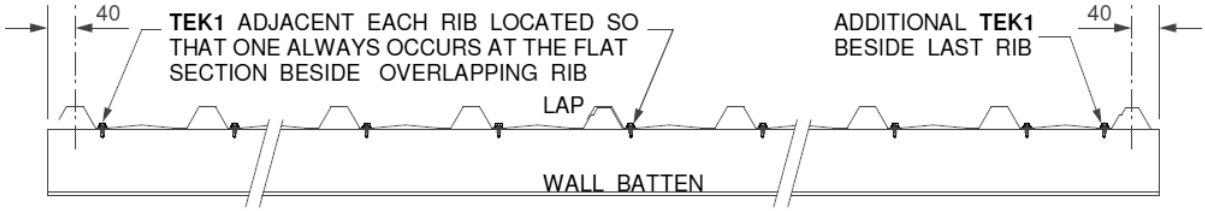
**CAUTION:** DO NOT TRY TO MAKE TOO MUCH ADJUSTMENT IN ONE SHEET. SPREAD ADJUSTMENT OVER 3 OR 4 SHEETS.

7) Pans of all roof sheets should be turned **UP** at the ridge to ensure wind driven rainwater blown up under the ridge capping does not drain into the garage. See sheet 3 for details.
8) Always **clean all claddings after fixing** is complete by sweeping or brushing all surfaces to remove drill swarth and particles from power cutting tools as these particles can rust and cause unsightly staining particularly on lighter shades of COLORBOND. This is especially important for roof cladding.

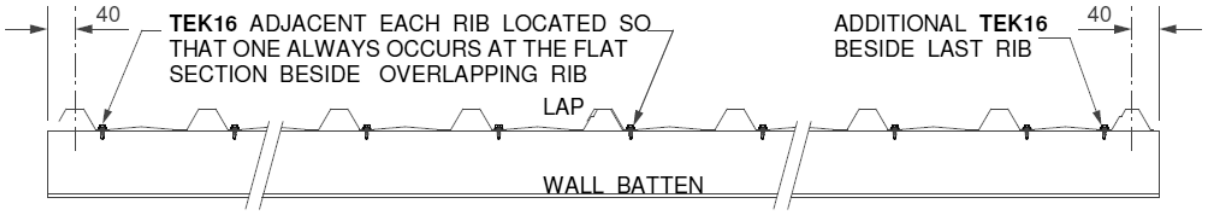
# Roof and Wall Cladding (continued)

## Wall Cladding

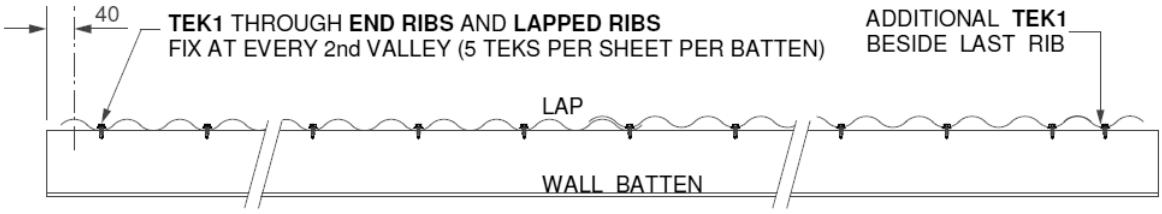
Wall cladding is either HI-PROFILE or corrugated profiles. Sheets should be located so that lower end overlaps the floor surface by 40mm minimum. Top end of side wall sheets will then be set down approximately 10mm from corner of fascia. Top of end wall sheets must be taper cut at 10° so that top is level with the top of roof battens or raking angle. Remember when sheeting around roller door openings that the head flashing is fitted before the head sheets.



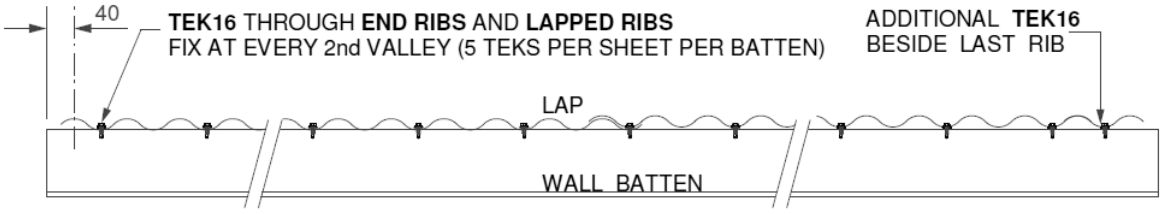

**TYPICAL HI PROFILE WALL SHEET FIXING PATTERN FOR NON-CYCLONIC PREMIER TH96 BUILDINGS**




**TYPICAL HI PROFILE WALL SHEET FIXING PATTERN FOR CYCLONIC PREMIER TH96 BUILDINGS**




**TYPICAL CORRUGATED WALL SHEET FIXING PATTERN FOR NON-CYCLONIC PREMIER TH96 BUILDINGS**



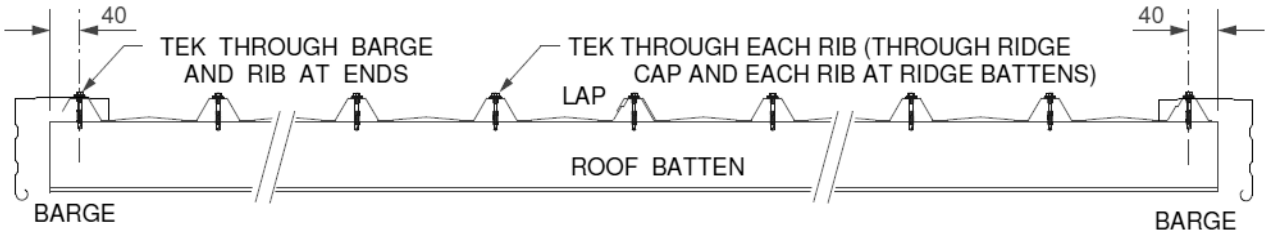

**TYPICAL CORRUGATED WALL SHEET FIXING PATTERN FOR CYCLONIC PREMIER TH96 BUILDINGS**

# Roof and Wall Cladding (continued)

## Roof Cladding

Roof cladding is either HI-PROFILE or Corrugated profiles. All roof fasteners are 50mm roof tek screws. Locate roof sheets so that they extend into the gutters by 50mm. If HI-PROFILE profile is used on the walls, roof sheets will extend past the outer face of the fascia by 80mm. Similarly, if Corrugated is used on the walls, the roof sheets will extend 70mm past the outer face of the fascia purlin.

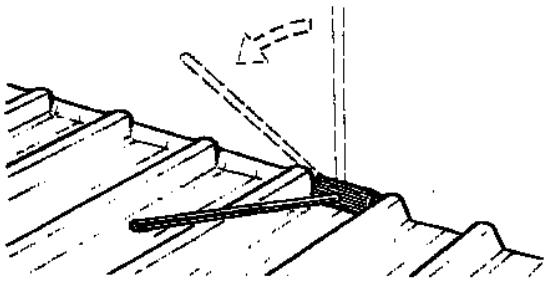
Any gaps at the ridge will be sealed by the ridge capping.

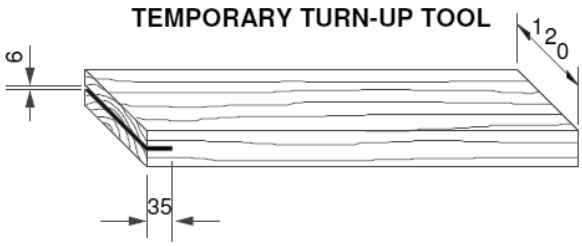


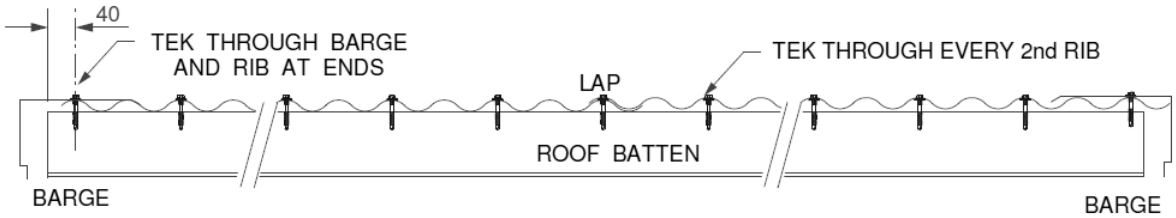

**TYPICAL HI-PROFILE ROOF SHEET FIXING PATTERN FOR NON-CYCLONIC & CYCLONIC CONDITIONS**

**HIGH PROFILE PAN TURN-UP**

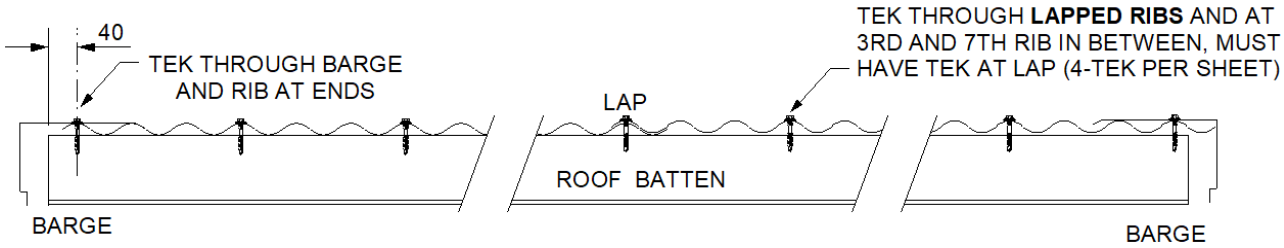
Ridge pans can be turned up after placement on the roof provided that the clearance between sheets is 50mm or more and a HI-PROFILE turn-up tool is used. If a turn-up tool is not available a temporary tool can be made by cutting a slot approximately 40mm deep x 6mm wide in the end of a piece of 120mm wide timber, but pans need to be turned up prior to fixing. Pans should be turned up approximately 80°.



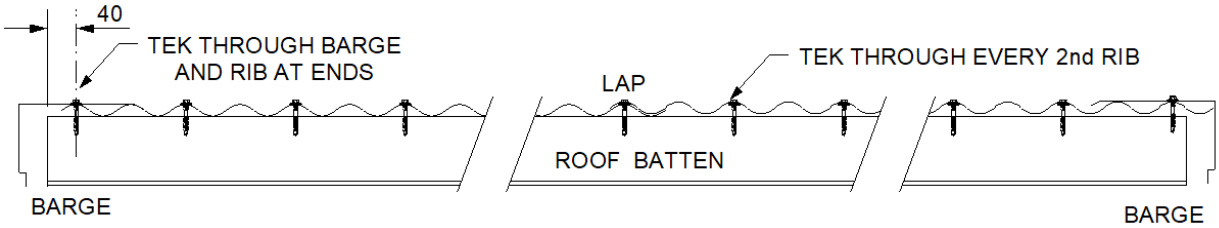





**TYPICAL CORRUGATED (CUSTOM ORB®) ROOF SHEET FIXING PATTERN AT FASCIA AND RIDGE PURLIN FOR NON-CYCLONIC & CYCLONIC CONDITIONS**



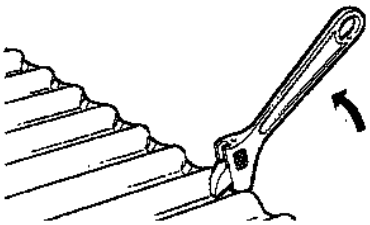

**TYPICAL CORRUGATED (CUSTOM ORB) ROOF SHEET FIXING PATTERN AT INTERMEDIATE PURLINS FOR NON-CYCLONIC CONDITIONS**




**TYPICAL CORRUGATED (CUSTOM ORB) ROOF SHEET FIXING PATTERN AT INTERMEDIATE PURLINS FOR CYCLONIC CONDITIONS**

**CORRUGATED CLADDING TURN-UP**

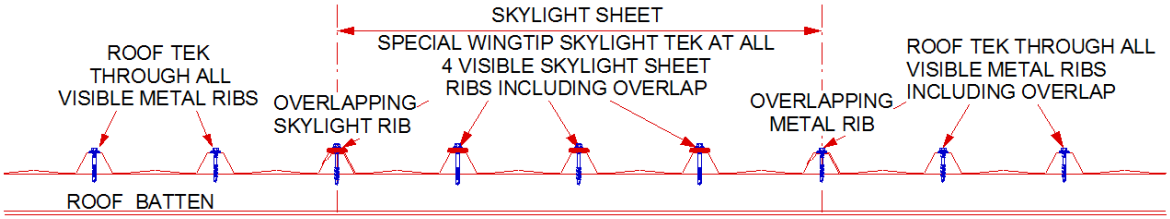
With a shifting spanner closed down to 2mm, grip valley 20mm in from sheet end and turn up as far as possible without splitting sheet.



# Skylights

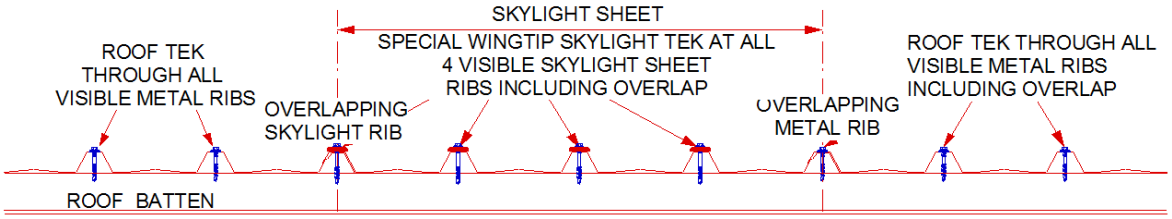
## General

1. Skylight sheets are available in both fibreglass and polycarbonate materials. Although the properties of these two materials may significantly vary the method of fitting and fasteners used are identical.
2. Skylight sheets run from under the ridge capping down to the eaves. If sheets supplied are longer than the adjacent metal roof sheets cut back to the same length. Either can be cut with any fine tooth wood or cold cut metal cutting disc. Polycarbonate can also be cut with heavy duty scissors or sharp tin snips.
3. Skylight sheets must not be located at either end of the roof next to the barge flashing.
4. Skylight sheets cannot be located beside each other. They must be separated by at least 1 metal sheet.
5. As the pans cannot be turned up as with metal cladding a profiled foam rubber sealing is supplied to seal the ridge against wind driven rainwater. This strip should be located between the skylight sheet and the ridge capping in line with the ridge battens so that it is teked and clamped in position when fastening ridge capping.
6. Fastening patterns are the same as for the adjacent roof sheets (see roof cladding pages for details).
7. For both cyclonic and non-cyclonic conditions a wingtip Tek fastener and a 30mm diameter neoprene washer assembly is supplied in lieu of the standard roof Tek. (**RED** for fibreglass and **GREY** for polycarbonate)
8. Skylight sheeting in certain locations will need to be predrilled with a 10mm hole to allow for thermal expansion. These locations will be: - a) under the ridge capping where normal roof teks are used.
   b) At skylight underlaps where normal roof teks are used.
9. Steel roof sheets under skylight overlaps wall also need to be predrilled to 10mm to allow the fixing of wingtip roof screws.
10. Fixing is similar for skylights on awnings except sheets slip under garage roof sheets instead of ridge capping. The skylights will need to be 10mm predrilled at these locations for thermal expansion.
11. Do ensure that the skylight manufacturer's installation recommendations are followed, including in relation to safety.



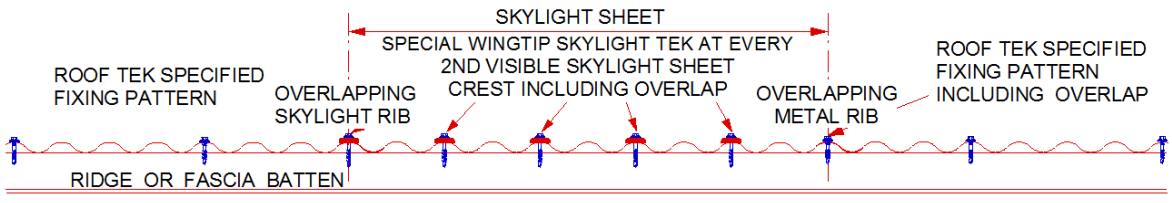

NOTE! STANDARD TEKS ARE USED AT THE RIDGE CAPPING

**HI PROFILE SKYLIGHT SHEET FIXING FOR NORMAL NON CYCLONIC CONDITIONS**



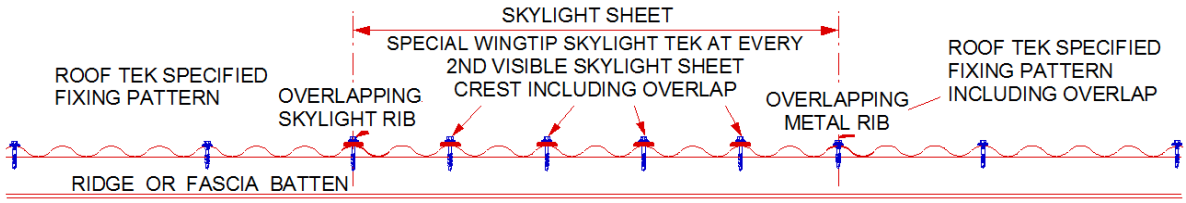

NOTE! STANDARD TEKS ARE USED AT THE RIDGE CAPPING

**HI PROFILE SKYLIGHT SHEET FIXING FOR CYCLONIC CONDITIONS**




NOTE! STANDARD TEKS ARE USED AT THE RIDGE CAPPING

**CORRUGATED PROFILE SKYLIGHT SHEET FIXING FOR NORMAL NON CYCLONIC CONDITIONS**

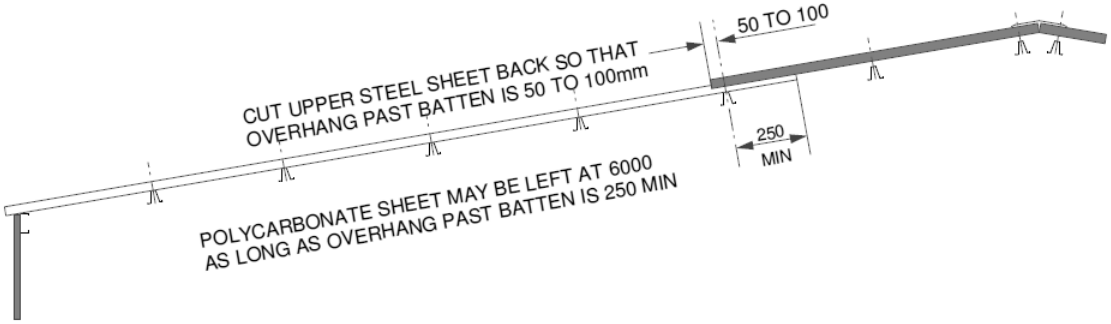



**CORRUGATED PROFILE SKYLIGHT SHEET FIXING FOR CYCLONIC CONDITIONS**

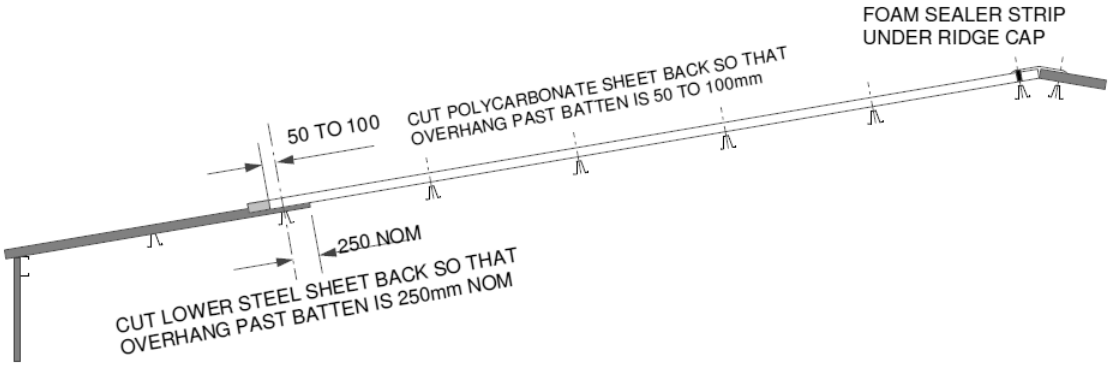
# Skylights (continued)

## Polycarbonate Sheets

Fitting of polycarbonate sheets is exactly the same as fibreglass sheets. However, polycarbonate is not available in sheets longer than 6000mm.
For larger spans where the roof sheet is longer than 6000mm, a 6000mm polycarbonate sheet is supplied together with a shortened roof sheet to make up the shortfall in length.
Architectural and cladding location drawings show the polycarbonate sheet located at the ridge and the short roof sheet at the eaves. The locations may be reversed. Sheets should be cut to achieve the laps shown below.




**TYPICAL ARRANGEMENT POLYCARBONATE SHEET AT RIDGE**




**TYPICAL ARRANGEMENT POLYCARBONATE SHEET AT EAVE**

From the examples shown it can be seen that in most cases the polycarbonate sheet could be located centrally with the steel make up sheet cut in two for location at eave and ridge.
This is OK as long as the laps shown are maintained.

# Flashing and Finishing

## General

Premier TH96 Shed flashings can be split up into 5 main groups - roller door, corner, cap, barge, and ridge. Other flashings and finishing are associated with accessories and are dealt with in other sections.

## Flashing Sequence

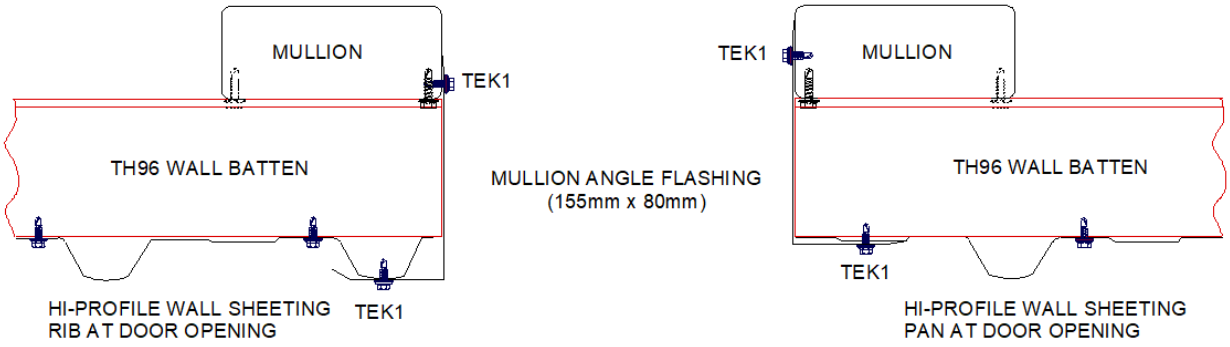
Roller door head flashing should be fitted either prior to or during fixing of sheets around opening as they use common Teks. Other vertical roller door flashings may be fitted at any time.
Corner flashings should be fitted after wall sheets but before barge or partition cap as they overlap corners.
Barge is fitted over end wall sheets and corner flashings and ridge capping is fitted last over the barge.

## Fasteners

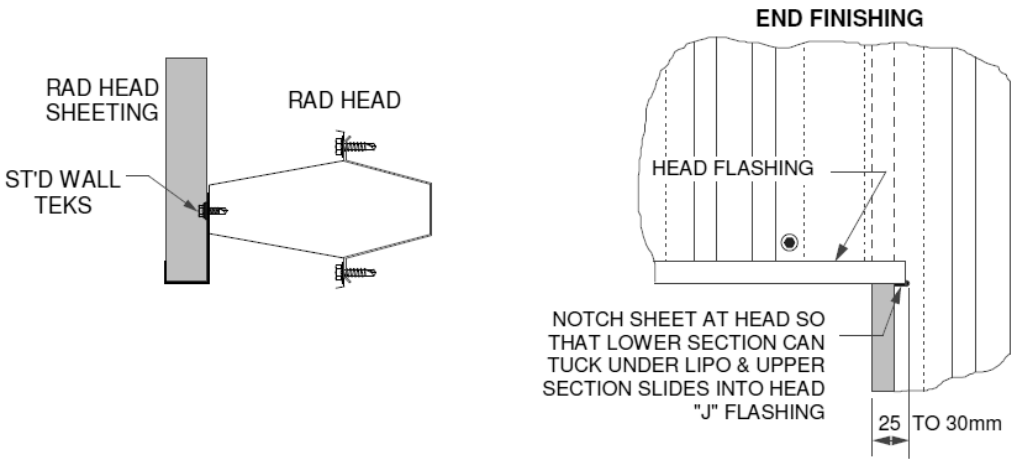
Where common Teks are used to fix flashing and sheeting the frequency and Tek specified for the sheeting must be used together with other Teks as required. This applies to roller door head flashing, barge flashing and ridge capping.

Use **Tek15** to fix all vertical wall flashings. Teks are supplied to fasten each leg near the top and bottom and at spacing's of 500mm maximum. e.g. 2400 eave Premier TH96 corner flashing is 2430 long. If Tek15's are fitted in each leg say 50 from ends 12-Tek15 would be supplied to be placed at 466mm nominal centres.

## Roller Door Flashing Details



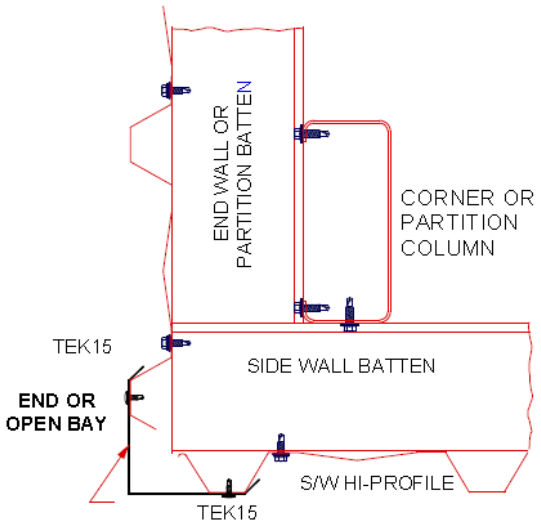

**ROLLER DOOR MULLION FLASHING DETAILS**




**ROLLER DOOR HEAD FLASHING DETAILS**

# Flashing and Finishing (continued)

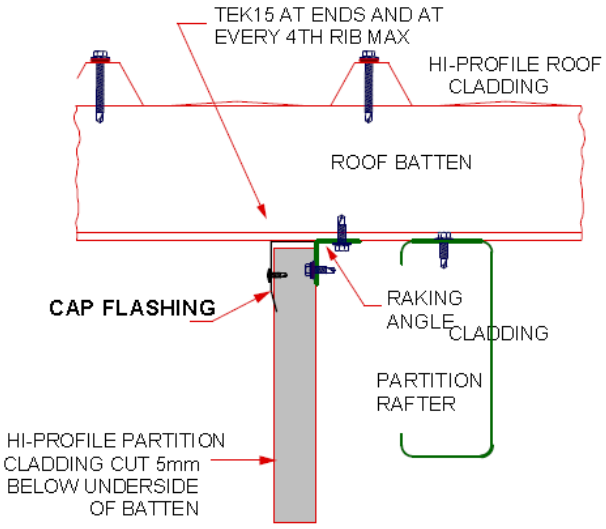
## Corner Flashing




**CORNER FLASHING DETAIL**

## Partition Cap Flashing

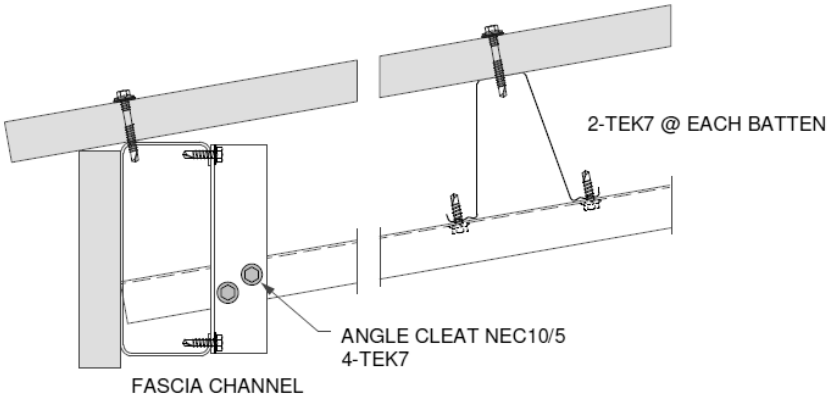
Taper cut top and fix partition wall sheets approximately 5mm below the underside of roof battens. Slip plain leg of partition cap flashing over top of partition wall sheets, push up against underside of roof battens and Tek in position. Tek15 at ends and every 4th rib.




**PARTITION WALL CAP FLASHING DETAIL**

## Partition Raking Angle Connection to Fascia

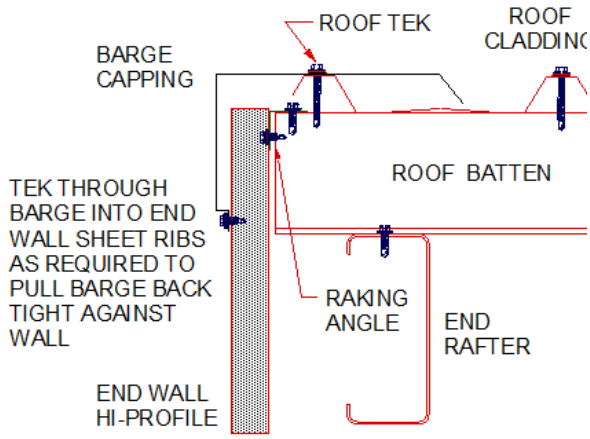
As the raking angle is located at the underside of roof battens at a partition it cannot be Teked to the top of fascia channel as for end walls.
Tek angle cleat NEC10/5 to lips of fascia channel with 2-TEK7 and raking angle to cleat with 2-TEK7.



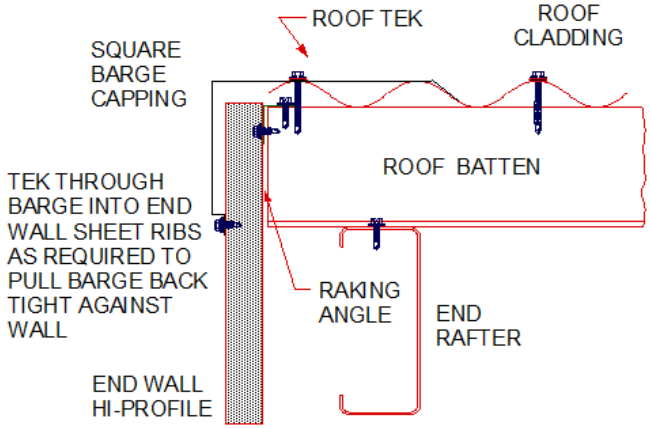

**PARTITION WALL CAP RAKING ANGLE TO FASCIA PURLIN DETAIL**

# Flashing and Finishing (continued)

## Barge Flashing

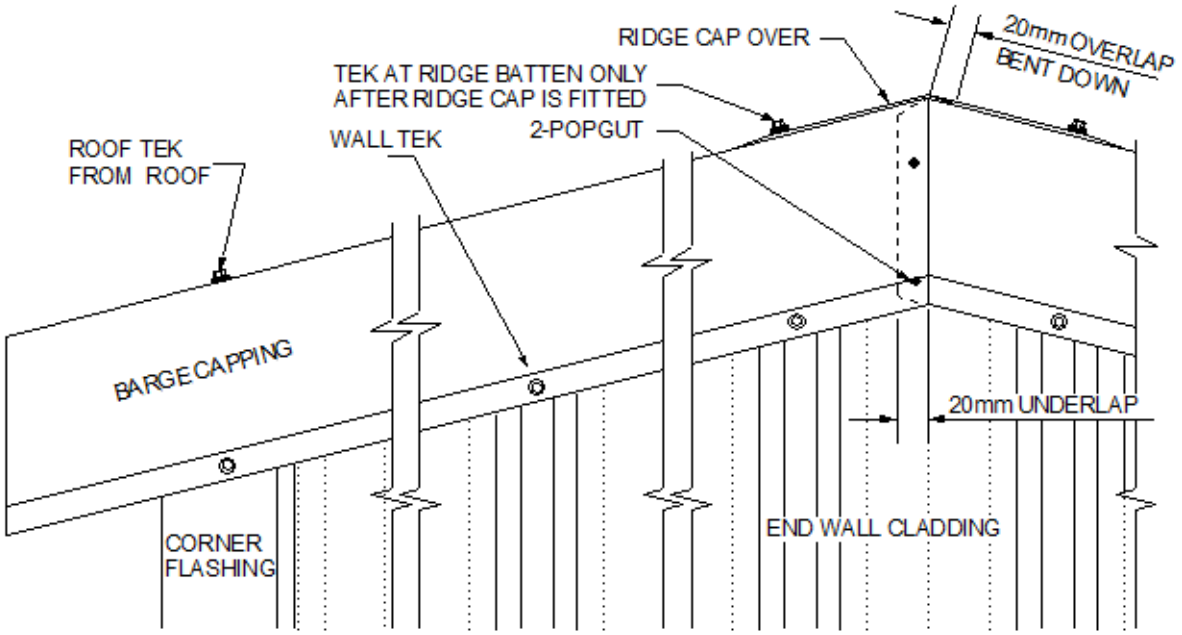


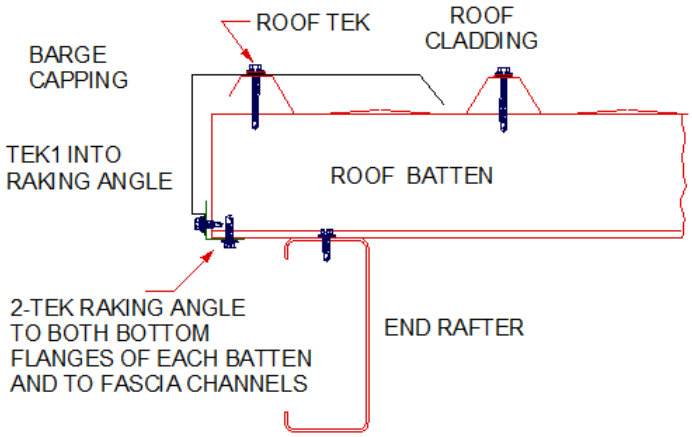

**BARGE FLASHING TO SUIT HI-PROFILE ROOF SHEETING DETAIL**




**BARGE FLASHING TO SUIT CORRUGATED ROOF SHEETING DETAIL**

## Finishing of Barge at Ridge and Gutter



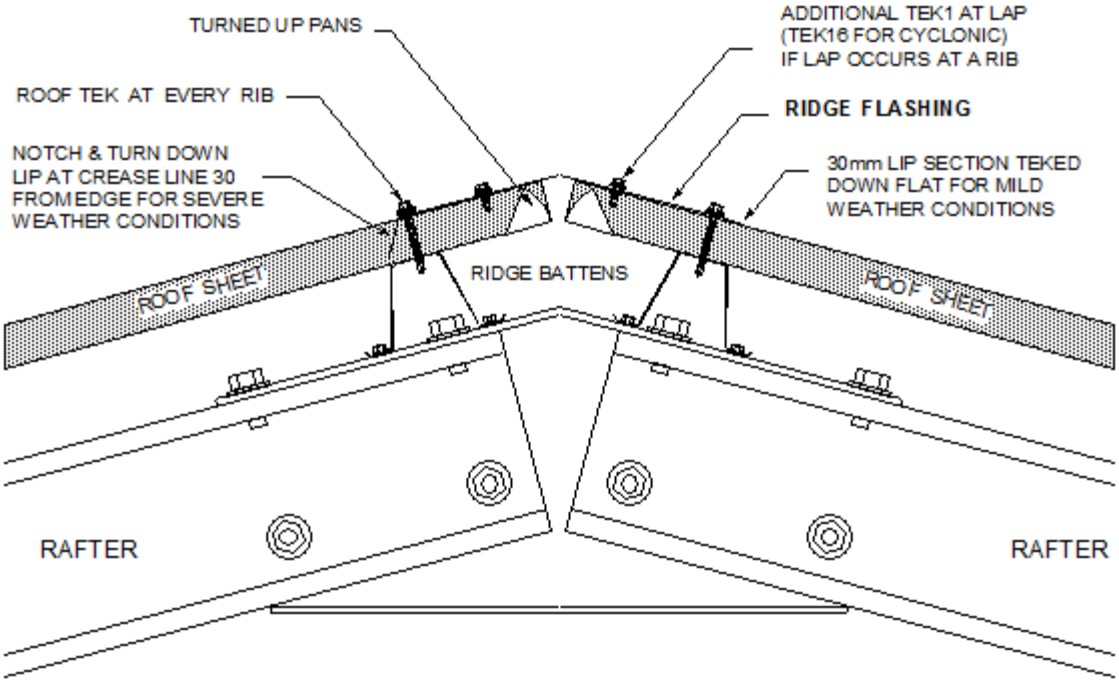

**BARGE FLASHING AT OPEN END WALL DETAIL (HI-PROFILE SHOWN-CORRUGATED SIMILAR)**

# Flashing and Finishing (continued)

## Ridge Capping

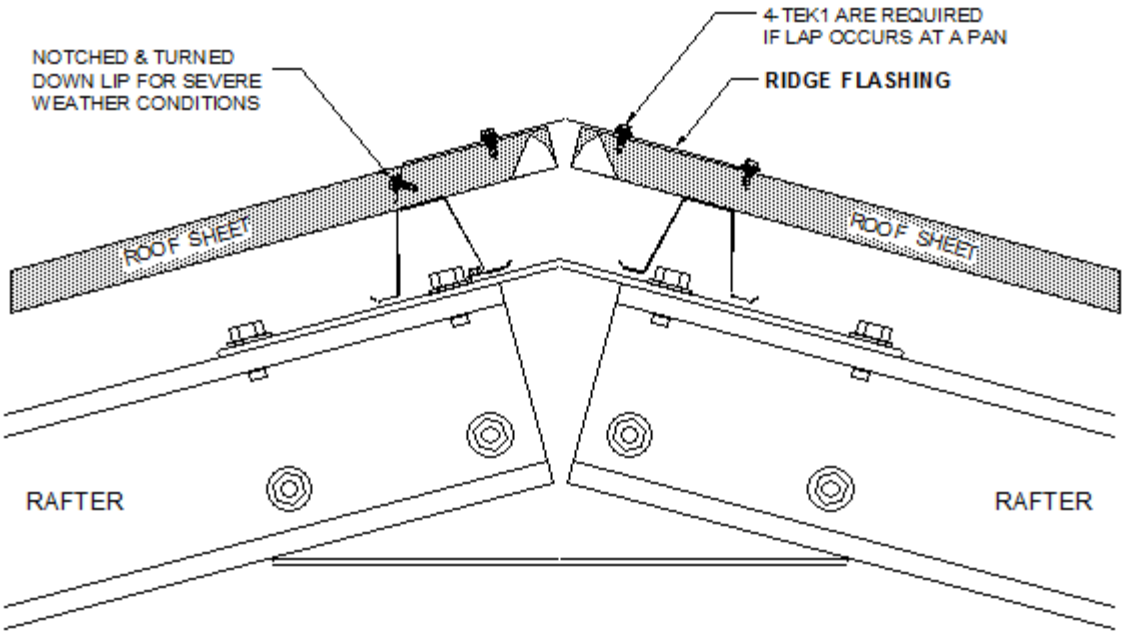
Ridge FLASHING is supplied in lengths to cover one bay with laps above frames. A shared roof tek is screwed through the capping, through each roof sheet rib and into ridge battens to fix both the sheeting and cap.
4-Tek1 (Tek16 for cyclonic) are supplied for ends and for each lap. If lap occurs at a rib only 2-Tek1 are required as shown below. Run a bead of silicone sealer approximately 12mm in from end of overlapping cap for water seal. For severe weather conditions notch edge of capping to clear ribs of HI-PROFILE sheets and bend down into pans at crease line 30mm in from edge.
At Premier TH96 ends run cap over barge and provide silicone sealer under end as for laps and fix with 4-Tek1.

## Ridge Cap Section at Sheet Rib




**RIDGE CAP AT SHEET RIB DETAIL**

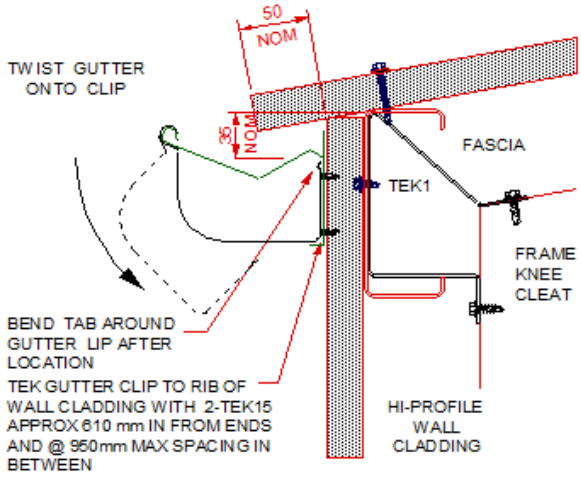
## Ridge Cap Section at Sheet Pan



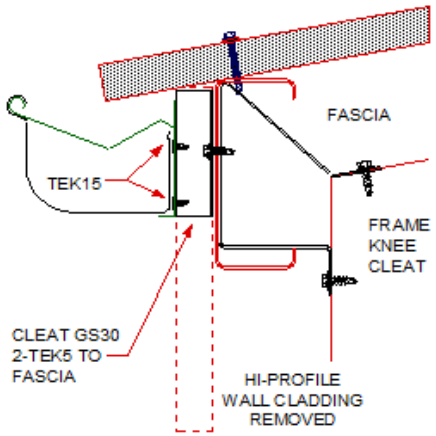

**RIDGE CAP AT SHEET PAN DETAIL**

## Gutter Installation

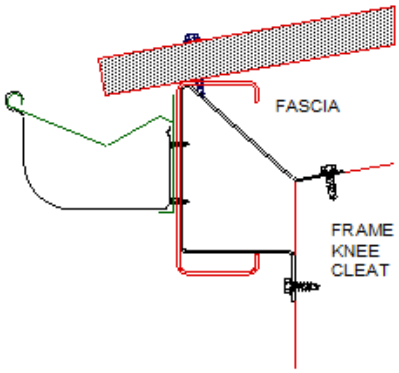
Gutter is supplied in lengths to cover one bay with laps at frames. They are fixed in position with special clips teked to the ribs of the HI-PROFILE wall cladding with 2-TEK15. Clips should be located at the 4th rib in from each end (approximately 610mm) and at spacing's not exceeding 950mm (every 5th rib) in between.
Where the side of a Premier TH96 is completely open (no side wall sheets at all) gutter clips are teked directly to the fascia batten. Where the side of a garage is partially sheeted - at areas with no wall sheeting the gutter bracket is teked to a spacer cleat GS30 which in turn is teked to the fascia with 2-TEK5 to bring brackets out in line with the brackets fixed to wall sheet ribs.
Stop ends to suit the gutter profile are used to finish gutters at ends and are fixed with 6 pop rivets (code POPGUT) and silicone sealant. Laps are joined and sealed with 6 pop rivets and silicone sealer as for stop ends.



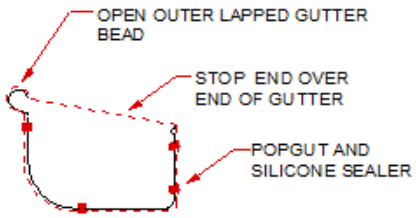

**SECTION AT SHEETED WALL**




**SECTION AT OPEN AREA OF PARTIALLY SHEETED WALL**




**SECTION AT UNSHEETED WALL**

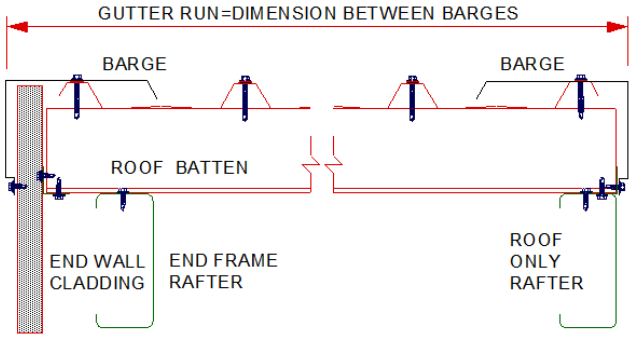



**TYPICAL RIVET ARRANGEMENT AT STOP END OR GUTTER LAP**

Fitting of stop ends and downpipe spigots and joining gutters at laps is more easily carried out on the ground and then the gutter run is lifted and rolled onto clips as one provided enough help is available for lifting the length of run. To do this the overall length of gutter must be established.

### OVERALL LENGTH OF GUTTER

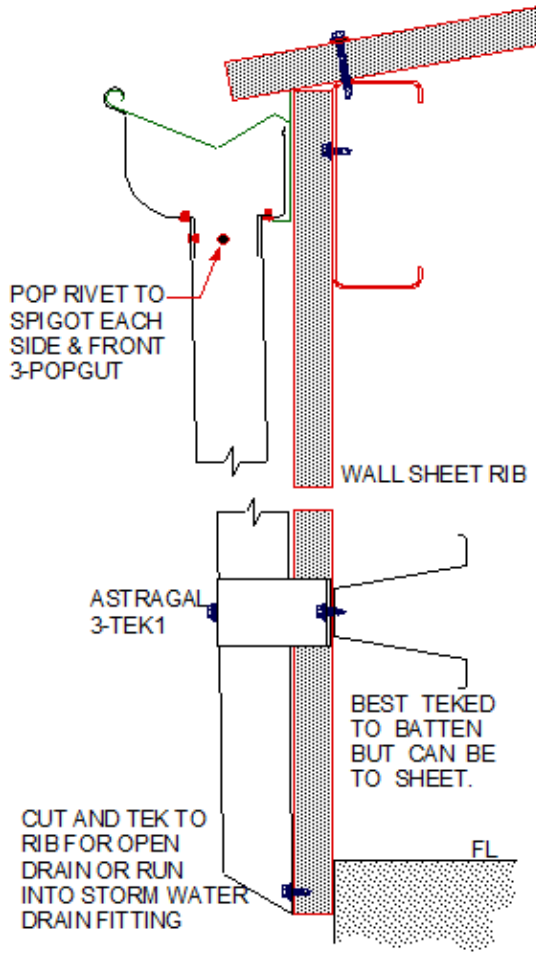
Total gutter length = the distance between the face of barges. If the barges are fitted or partially fitted simply measure the distance between the inner faces.
If the barges are not fitted
OVERALL LENGTH = THE DISTANCE OVER END WALL SHEETING +32mm (Sheerline Barge)
+20mm (Square Barge)
If end or ends are open without wall or gable infill sheeting, then measure to the outside face of frames instead of sheeting.



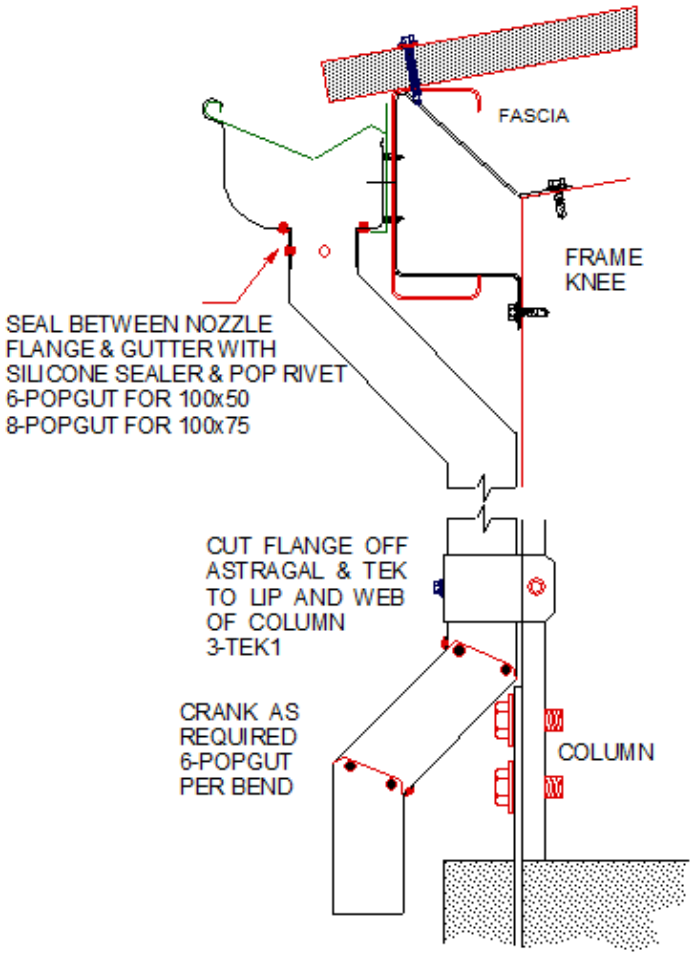
# Downpipe Installation

## Downpipes

Downpipes are supplied in 1800mm and or 2400mm lengths and are tapered to allow lap joints, large end to top. Two sections may need to be cut from one of the lengths supplied to make up the required lengths of 2 complete downpipe drops. Minimum lap is 50 mm.
100x75 is the standard size downpipe. 100x50 is optional for smaller buildings.
For each downpipe drop a spigot, an astragal (strap) for each downpipe length used in the drop and associated Teks and Pop Rivets are supplied.

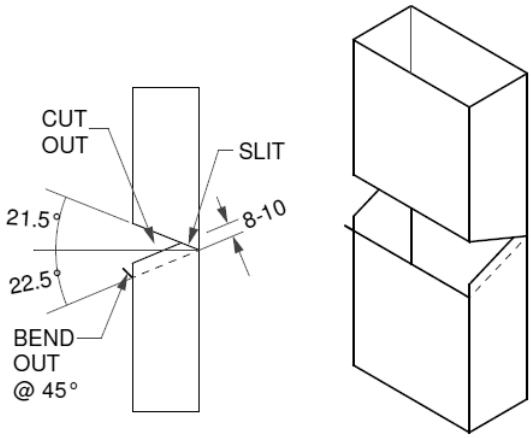


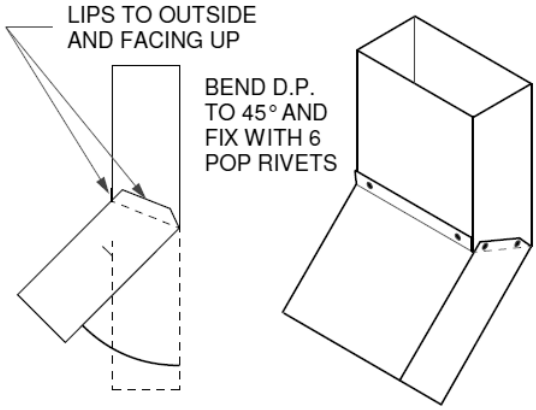

**TYPICAL DOWNPIPE ARRANGEMENT AT CLAD WALL**



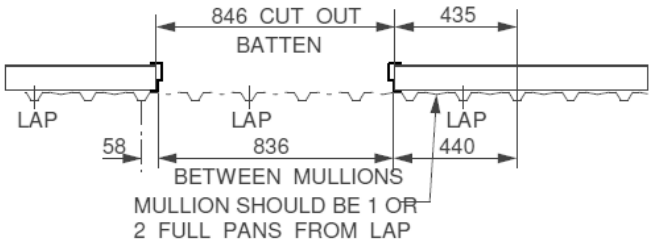

**TYPICAL DOWNPIPE ARRANGEMENT AT OPEN COLUMN**

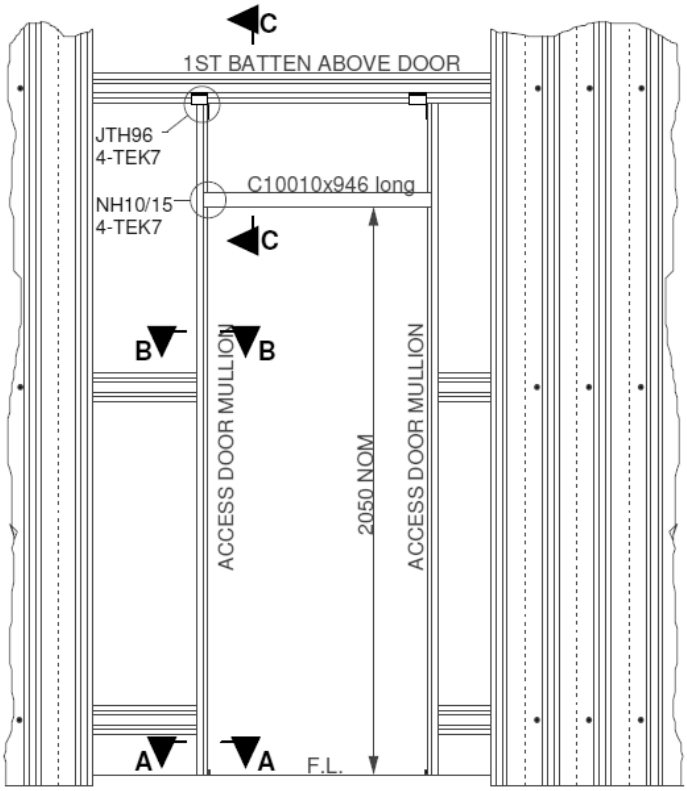
**TYPICAL 45° DP CRANK**



# Premium Access Doors

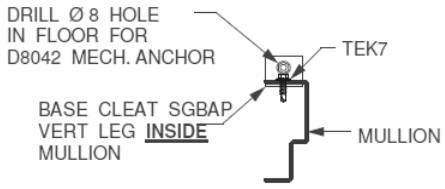


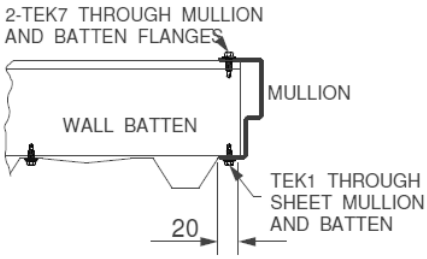

## Door Opening Framing

1. When sheeting leave off 2 sheets in the area selected for door location (pitch out these 2 by holding in position or fixing with a couple of Teks until 3rd sheet is located) and continue sheeting.
2. Measure from rib centre line and cut battens as shown at left.
3. Cut mullion length to suit (SECT C-C). Note: Allow for thickness of base cleat under mullion.
4. Fit a mullion over batten ends & fascia or header batten, locate cleat SGBA in base of mullion (SECT A-A), plumb vertical and Tek at top and inside of battens only (SECT B-B & C-C).
5. Fit other mullion to 836 dimension top and bottom and Tek as for 4.
6. Line up bottom of mullions with edge of concrete, hold base cleats in position (SECT A-A), mark concrete through cleat holes and drill 2-8mm diameter x 40mm deep holes in concrete. Fix base cleats with D8042 mechanical masonry anchor. Tek mullion to base cleat, 1-Tek20 (SECT B-B).
7. Notch C100 lintel at ends to fit mullion recess and Tek in position using NH10/5 cleats.
8. Tek "J" head flashing in position with 2-TEK1 placed where cladding ribs will be located.
9. Measure & partially cut across the 2 sheets with a cold cut metal cutting disc to suit the head flashing height location and length. Extend cut approx. 20mm past mark to produce a slot to clear head flashing.
10. For vertical cut below head use cold cut metal cutting disc, nibbler, or snips 20mm from rib (SECT B-B)
11. Locate sheets and tuck cut edges under mullion leg and fix. Ensure that a TEK1 passes through mullion and sheet and screws into each of the batten ends.

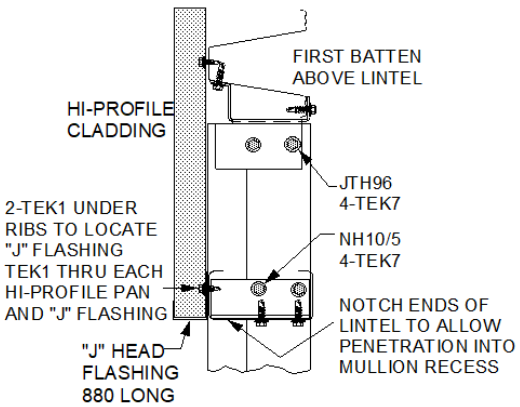
All details shown are for outward opening doors. For inward opening doors simply locate mullions with recess to the inside, all other details remain the same.



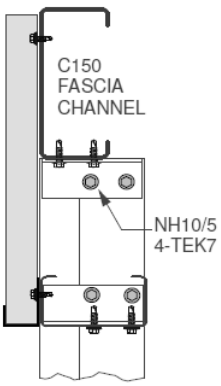

**SECTION A – A**




**SECTION B - B**




**SECTION C - C**
MOST COMMON CONNECTION WHERE BATTEN IS AVAILABLE ABOVE DOOR

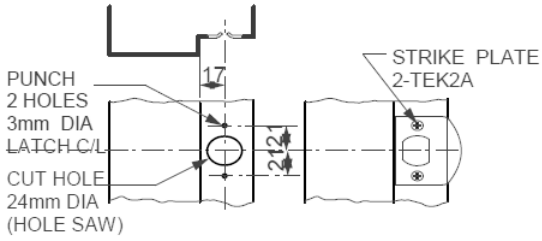



**SECTION C - C**
SIDE WALLS WHERE BATTEN NOT AVAILABLE ABOVE DOOR

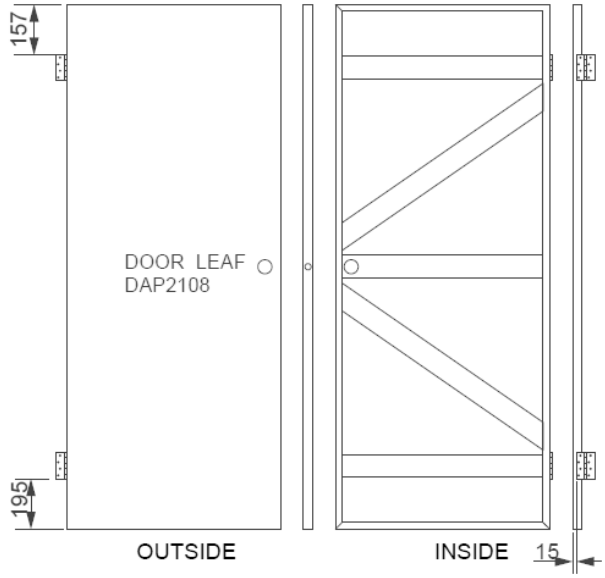
# Premium Access Doors (continued)

## Door Fitting

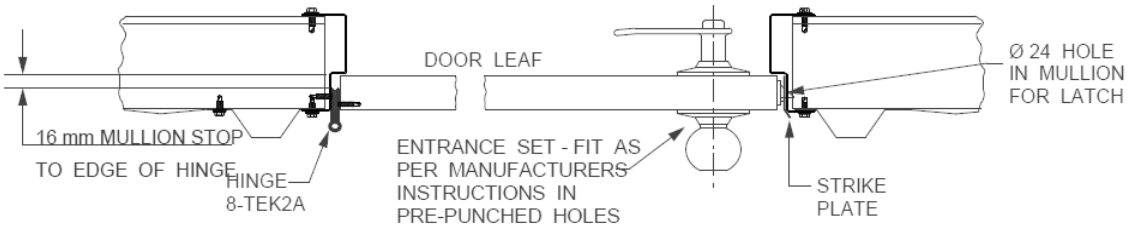
1. Fix 2 hinges to edge of door leaf. Locate edge of hinge 15mm in from inside face and 195 from ends of door. 4-TEK2A each hinge.
2. Fit entrance lock set in pre-punched holes generally in with manufacturer's instructions. Insert latch in 24mm diameter hole, locate knob and lever handle in 54mm diameter holes and lightly tighten 2 screws.
3. Ensure latch is located centrally with plate parallel to edge of door and punch 2 holes in edge through 2 holes in latch plate approximately 3 mm diameter and fix with countersunk screws provided. Note it is important that holes are punched and not drilled as this results in a depression which allows seating of back of plate and greater screw stripping resistance. TIP - A 3mm diameter nail can be used as the punch.
4. Fit door in opening and fix hinges to mullion with 4-TEK2A each hinge.
5. Mark centre line height of latch on mullion and punch 2 holes 3mm diameter in rebated section. Cut 24mm strike hole in mullion opposite latch to suit (see detail below). If a 24mm hole saw is not available drill a couple of smaller holes and file until the latch and tang on strike are clear.
6. Tek or rivet cabin hook to wall at batten (2-TEK2 or 2-POPGUT). Rivet hook eye to door face to suit (2-POPGUT).




**STRIKE PLATE FITTING**




**DOOR LEAF**




**TYPICAL SECTION AT FITTED ACCESS DOOR**

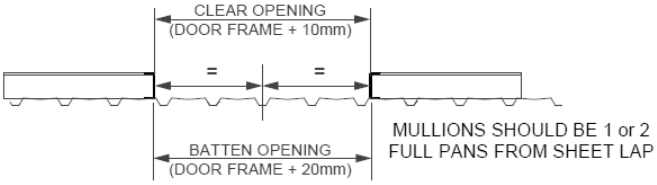
Details are for outward opening doors. For inward opening rotate mullions, entry set & hinges 180°.

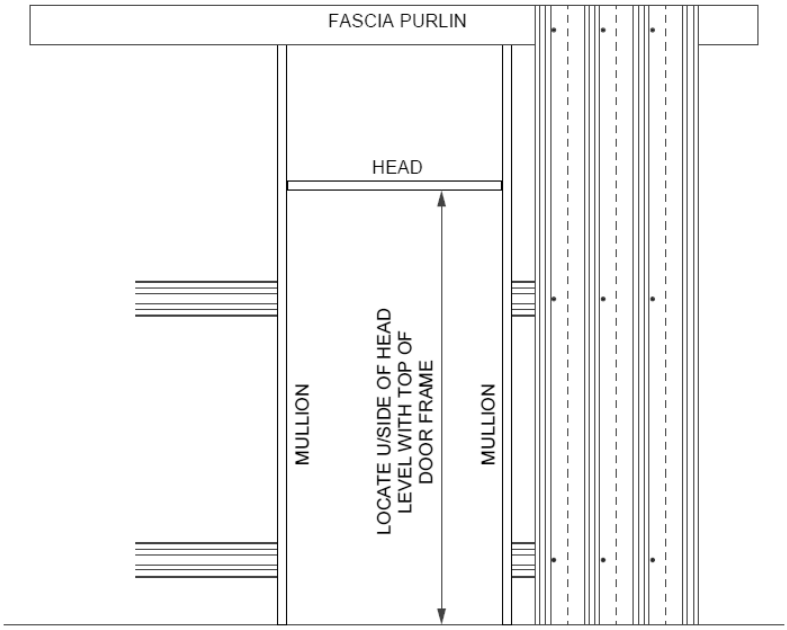
| GARAGE DOOR SMALL ITEMS - IN BOX | | | |
|---|---|---|---|
| **QTY** | **PART N°** | **DESCRIPTION** | **COMMENTS** |
| 1 | CABHOOK | 100mm CABIN HOOK | CHROME PLATED |
| 2 | D8042 | MECH. ANCHOR, Ø8x42 | ZINC PLATED |
| 1 | 100STPBV | LOCKSET, LEVER HANDLE | 100 SERIES, BRASS PLATED |
| 2 | HINGE/GAR | 100x35 FIXED PIN BUTT HINGE | ZINC PLATED |
| 4 | POP GUT | POP RIVET, RAW42 | |
| 2 | SGBAP | PREMIUM MULLION BASE CLEAT | GALV |
| 4 | NH10/5 | ANGLE RD HEAD CLEAT | GALV |
| 2 | JTS96 | TS 96 CONNECTION CLEAT | GALV |
| 2 | TEK1 | TEK, HWF + NEO, #10:16x16 | CLASS 3 - (EXTERNAL USE) |
| 6 | TEK2 | TEK, WAFER HD, #10:16x22 | CLASS 3 - (EXTERNAL USE) |
| 20 | TEK2A | TEK, BUGLE HD, M5:14x20 | CLASS 3 - (EXTERNAL USE) |
| 26 | TEK20 | TEK, HWF, #14:10x20 | CLASS 3 - (EXTERNAL USE) |
| **PACKED WITH OTHER ITEMS IN BHP SHRINK WRAP PACK** | | | |
| 1 | DAP2108 | PREMIUM ACCESS DOOR LEAF | ZINCALUME OR COLORBOND |
| 1 | DT… | FLASHING, RD HEAD "J" x 880 LG | ZINCALUME OR COLORBOND |
| 2 | MS… | PREMIUM AD MULLION x 3000 LG | GALV |
| 1 | CS… | LINTEL, C10010 x 836 LG | GALV |

# Pre-Hung Door Framing / Framed opening

## General

The framing kit is a general-purpose kit suitable for fixing of pre-hung door leaf's with their own frame or glass sliding door kits. Mullions are supplied in lengths to suit fixing either the next batten height above or to the fascia purlin. The width of the framing kit suits all single leaf pre-hung doors, double leaf pre-hung doors up to 2300 wide and glass slider kits.




## Door Opening Framing

1. Openings may be located in side and end walls between columns or mullions of any Premier building but cannot be located in any braced panel.
2. Establish door location so that door framing mullions are located at least one full wall cladding pan from cladding lap.
3. Determine opening height and width. ***The door framing must be centrally located about the centreline of a sheeting rib so that cut sheeting pans can tuck behind the external fin on the door frame.***
4. Clear opening width between mullions should be width of the pre hung door frame + 10mm.
5. Batten opening width should be pre-hung door frame + 20mm.
6. Cut mullions to length to suit and fix to wall battens and termination point (fascia or batten) refer to details on previous page.
7. Cut door frame head to width-clear opening between mullions less 10mm.
8. Fix head mounting cleats to mullions and locate frame head on top of NH10/5 cleats. Fasten as per details.
9. Locate and fix the mullion base cleats. Drill 8mm diameter x 40mm deep holes in the concrete surface. Fix base cleat SGBAP to concrete with 1 x D8042 masonry anchor per Mullion. Fix base cleat to mullion inner web with 2-TEK7's. Refer to details on previous page.
10. Cut wall cladding around opening to suit. Ensure that wall sheets cut above the door frame finish a minimum of 10mm above the door leaf. Fix wall sheeting above the opening to the frame head.
11. Slip the cut wall cladding pans behind the external fin of the pre-hung door frame.
12. Fasten the external fin on the door frame to the door mullions at batten locations, and midpoint between those battens.
    Fix each fin with a minimum of 4 tek screws per fin.

## Framed Openings

Various conditions exist for framed openings depending on engineering conditions.
The following sections cover each of the conditions for framed openings.

It is important to identify the condition that exists in your shed and carefully read and identify the parts required to assemble correctly.

The different conditions listed are:

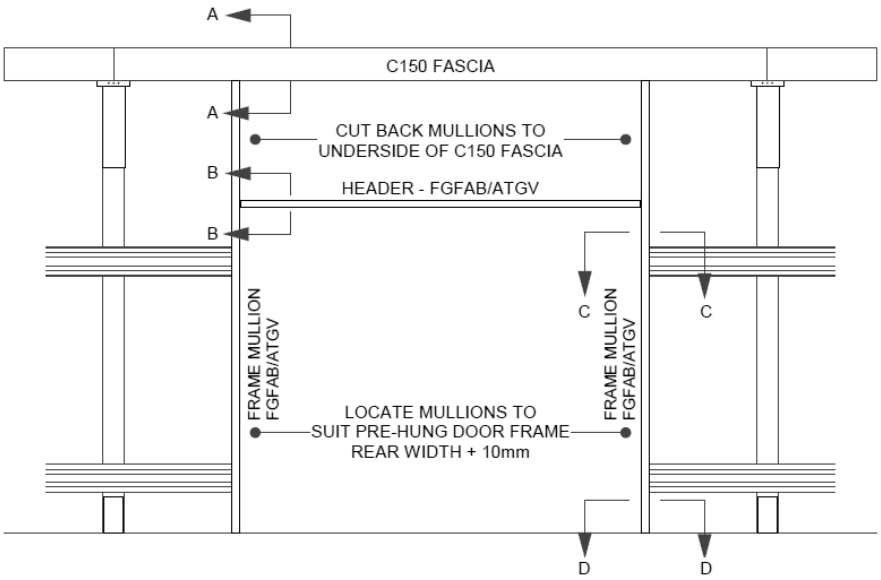
- Side wall C-Channel mullion to either a wall batten or C150 fascia.
- Side wall C150 mullion to a C150 fascia.
- Side wall C150 mullion to a TH96 wall batten.
- End wall C150 mullion to an end frame rafter.
- End wall C150 mullion to a TH96 wall batten.

Each condition is covered in its own section.

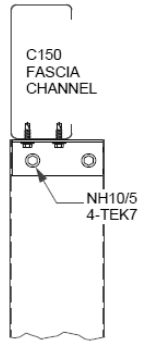
## Framed Opening C-Chanel

### General

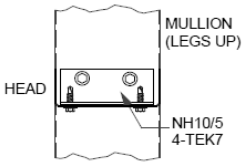
The framing kit is a general-purpose kit suitable for fixing of a glass sliding door kit. Mullions are supplied in lengths to suit fixing either the next batten height above or to the fascia purlin. The width of the framing kit suits a glass slider kits.



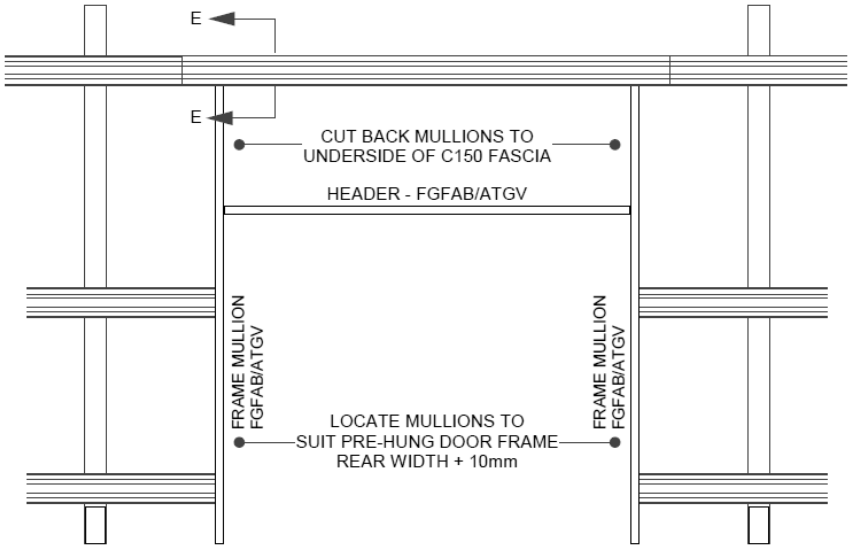

**TYPICAL MULLION TO C150 FASCIA ARRANGEMENT**



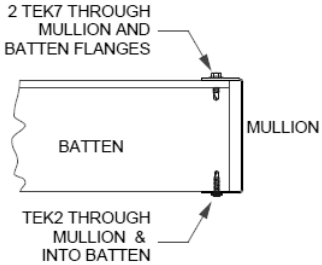

**SECTION A-A**
**FRAME MULLION TO C150 FASCIA**



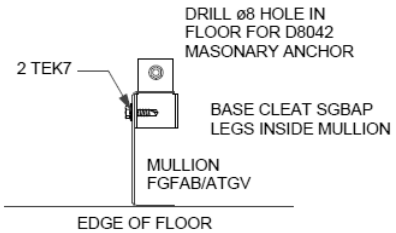

**SECTION B-B**
**FRAME MULLION & FRAME HEAD ARRANGEMENT**



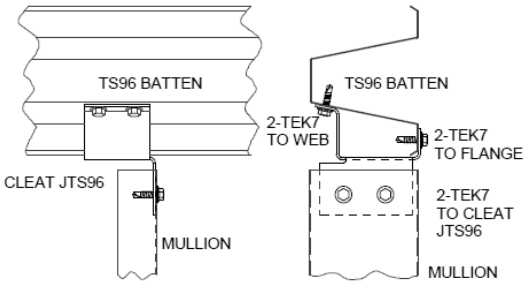

**TYPICAL MULLION TERMINATING AT TH96 BATTEN ARRANGEMENT**




**SECTION C-C**
**FRAME MULLION & WALL BATTEN ARRANGEMENT**




**SECTION D-D**
**MULLION BASE CLEAT DETAIL**

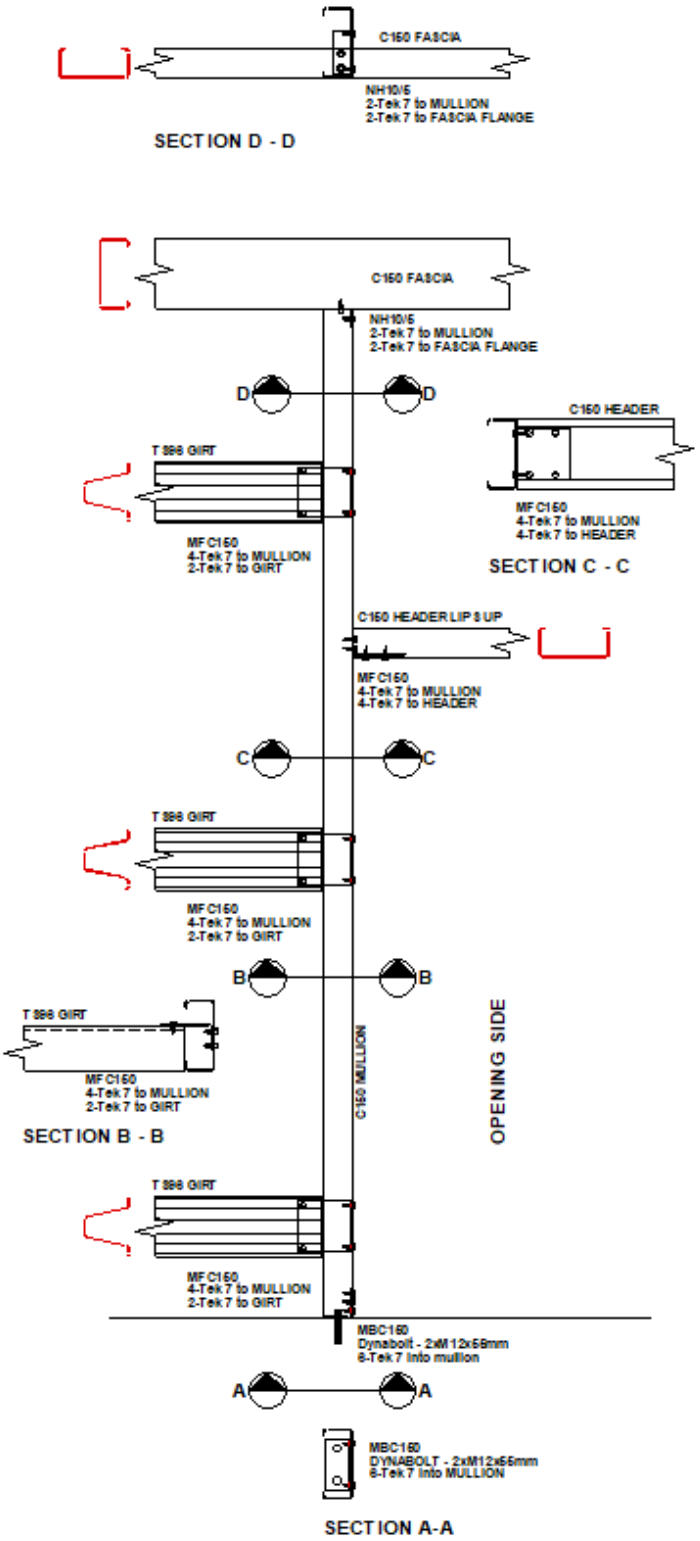



**SECTION E-E**
**MULLION TERMINATING AT BATTEN ARRANGEMENT**

## Framed Opening C150 Mullion to C150 Fascia

### General

The framed opening kit is a general-purpose kit suitable for fitting items such as aluminium framed sliding glass doors and shop fronts etc. Mullions are supplied long enough to reach the underside of the C150 fascia. A C150 head beam is also supplied long enough to accommodate the opening width required.



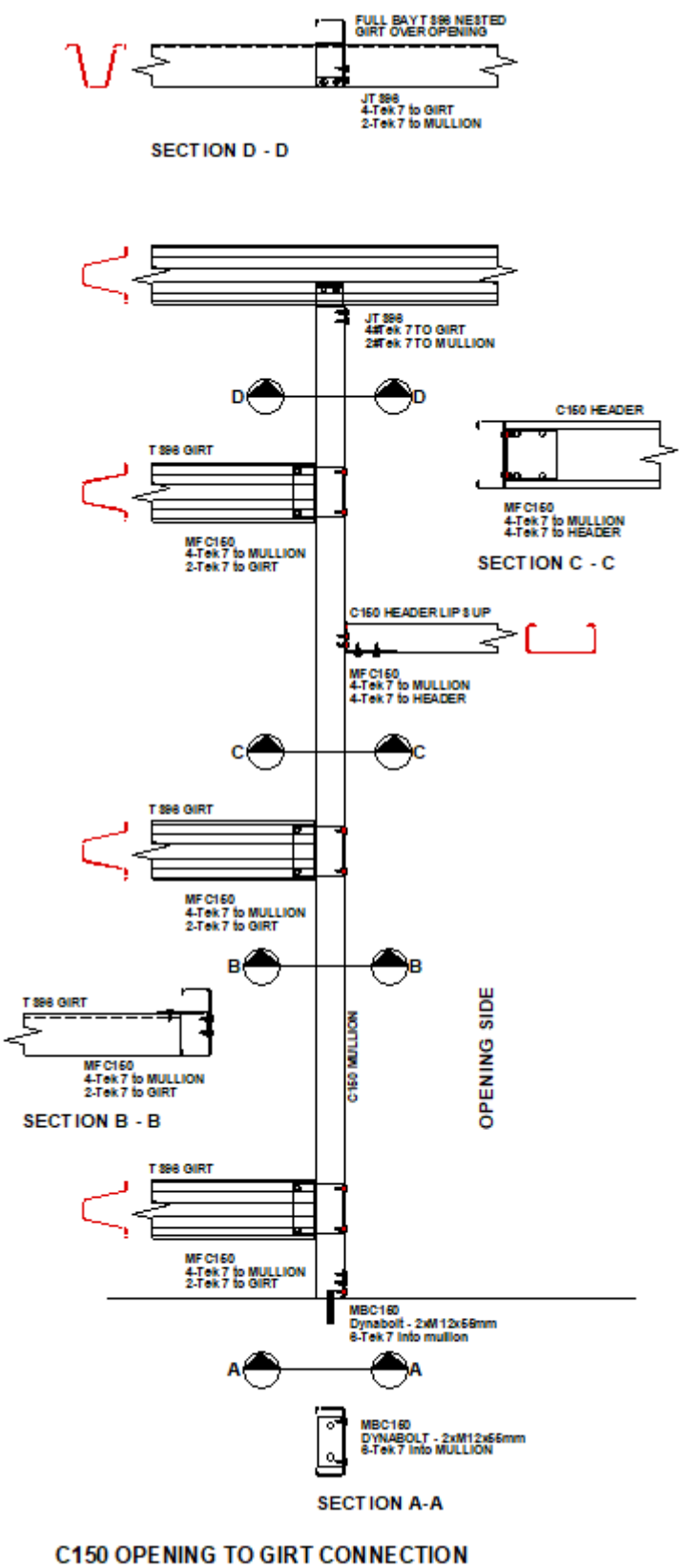

C150 OPENING TO C150 FASCIA CONNECTION

1. Opening are in side walls between columns of garage.
2. Establish opening Size and location. Mullions should be placed to coincide with pans in wall sheets and slab edge.
3. Place base connections as required MBC150. Drill and Dynabolt to floor slab with 2-M12 Dynabolts. (SECT A - A)
4. Place NH10/5 cleat to the C150 fascia to align vertically with base cleat, with 2-Tek 7 fix NH10/5 cleat to fascia. (SECT D -D)
5. Fix opening mullion to base cleat with 8-Tek 7.
6. Fix mullion to NH10/5 fascia cleat with 2-Tek 7. (SECT D-D)
7. Mark head height on mullions either side of opening and tek two MFC150 cleats in position with 4-Tek 7 to each mullion (SECT C -C)
8. Attach head beam on top of cleats MFC150 and tek in position, 4-Tek 7
9. Wall battens to be trimmed to the required opening width and attached to each mullion using MFC150 cleats and the designated number of tek screws. (SECT B -B)
10. Mullions and head should be flush with slab edge and batten outer face.

## Framed Opening C150 Mullion to TH96 wall batten.

### General

The framed opening kit is a general-purpose kit suitable for fitting items such as aluminium framed sliding glass doors and shop fronts etc. Mullions are supplied long enough to reach the underside of a TH96 wall batten. A C150 head beam is also supplied long enough to accommodate the opening width required.



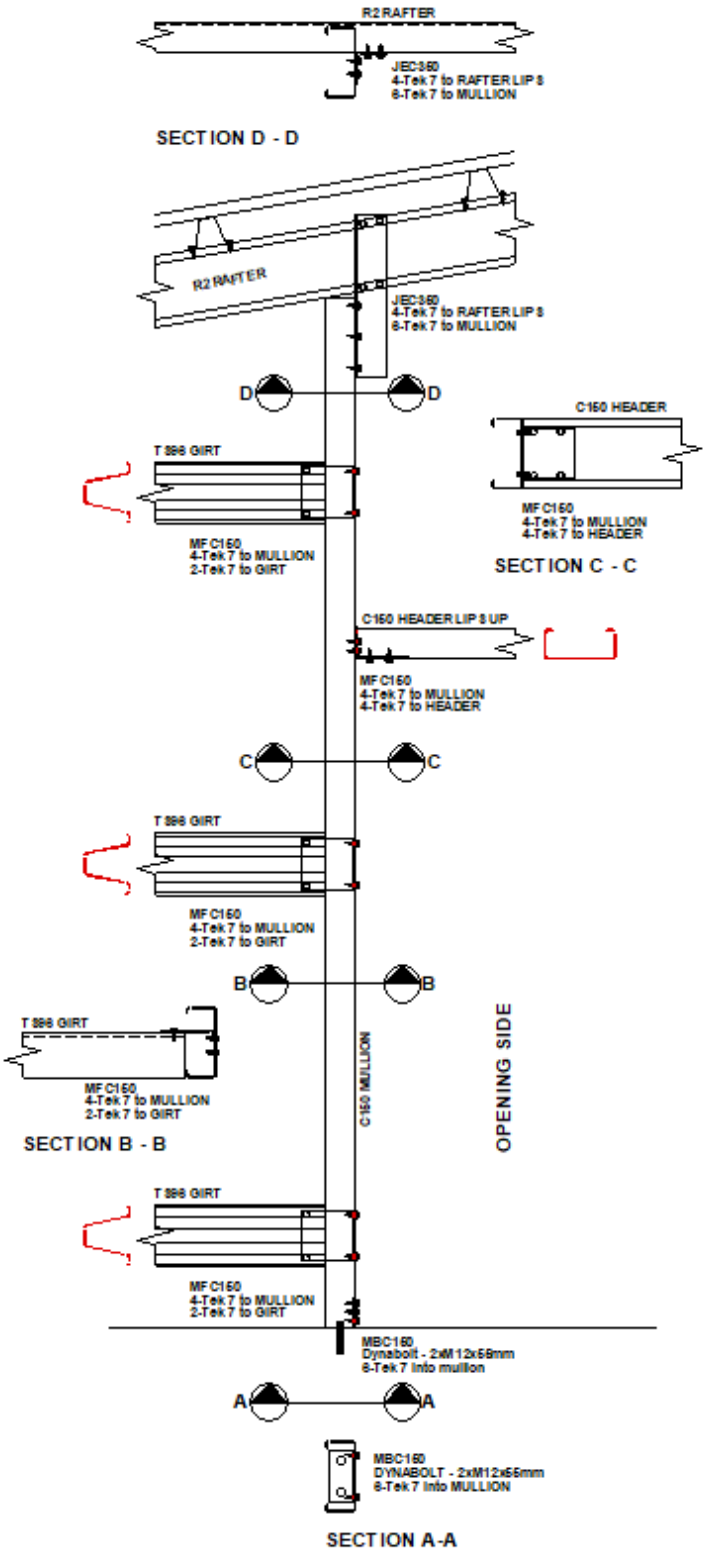

C150 OPENING TO GIRT CONNECTION

1. Opening are in side or end walls between columns of garage.
2. Establish opening Size and location. Mullions should be placed to coincide with pans in wall sheets and slab edge.
3. Place base connections as required MBC150. Drill and Dynabolt to floor slab with 2-M12 Dynabolts. (SECT A - A)
4. Place JTS96 cleat to wall batten to align vertically with base cleat, fix with 4-Tek 7 fix JTS96 cleat to wall batten. (SECT D -D)
5. Fix opening mullion to base cleat with 8-Tek 7.
6. Fix mullion to JTS96 wall batten cleat with 2-Tek 7. (SECT D-D)
7. Mark head height on mullions either side of opening and tek two MFC150 cleats in position with 4-Tek 7 to each mullion (SECT C -C)
8. Attach head beam on top of cleats MFC150 and tek in position, 4-Tek 7
9. Wall battens to be trimmed to the required opening width and attached to each mullion using MFC150 cleats and the designated number of tek screws. (SECT B -B)
10. Mullions and head should be flush with slab edge and batten outer face.

## Framed Opening C150 Mullion to End Rafter

### General

The framed opening kit is a general-purpose kit suitable for fitting items such as aluminium framed sliding glass doors and shop fronts etc. Mullions are supplied long enough to reach the underside of the End frame Rafter. A C150 head beam is also supplied long enough to accommodate the opening width required.




C150 OPENING TO END RAFTER CONNECTION

1. Opening are in side walls between columns of garage.
2. Establish opening Size and location. Mullions should be placed to coincide with pans in wall sheets and slab edge.
3. Place base connections as required MBC150. Drill and Dynabolt to floor slab with 2-M12 Dynabolts. (SECT A - A)
4. Place JEC350 cleat to the End Rafter to align vertically with base cleat, with 4-Tek 7 fix JEC350 cleat to Rafter toes. (SECT D -D)
5. Fix opening mullion to base cleat with 8-Tek 7.
6. Fix mullion to JEC350 Rafter cleat with 6-Tek 7. (SECT D-D)
7. Mark head height on mullions either side of opening and tek two MFC150 cleats in position with 4-Tek 7 to each mullion (SECT C -C)
8. Attach head beam on top of cleats MFC150 and tek in position, 4-Tek 7
9. Wall battens to be trimmed to the required opening width and attached to each mullion using MFC150 cleats and the designated number of tek screws. (SECT B -B)
10. Mullions and head should be flush with slab edge and batten outer face.

# Aluminium Sliding Windows

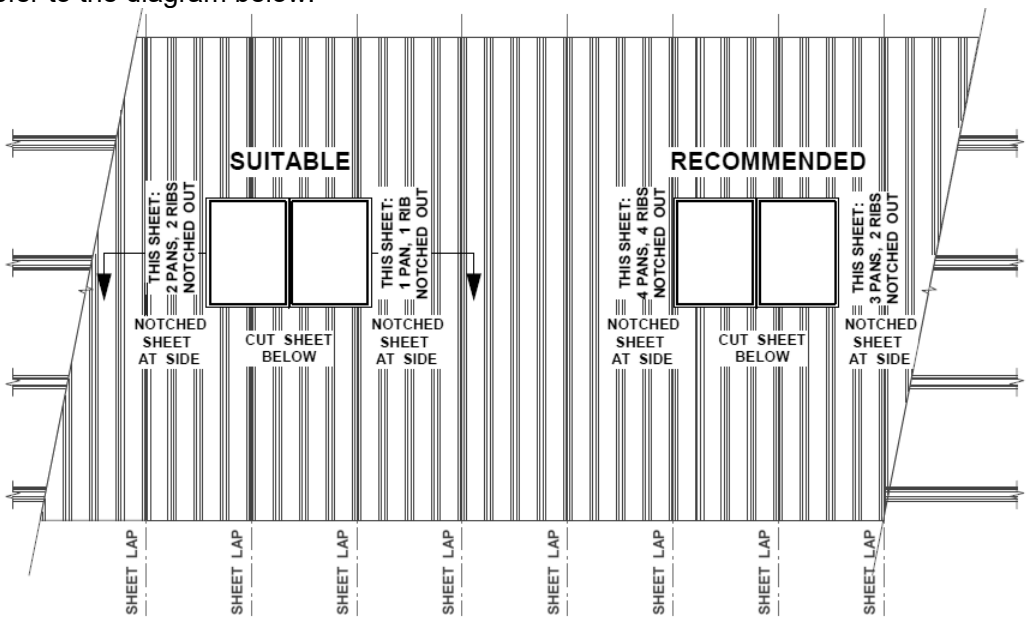
## General:

Aluminium sliding windows are best fitted during the fixing of wall sheeting.
Window opening kits include vertical folded mullions and C100 horizontally fixed sections (window head or window sill). These members allow the window to fasten securely to independent framing members on all four sides of the window.
Typically, the window opening kits comprise of the following components:

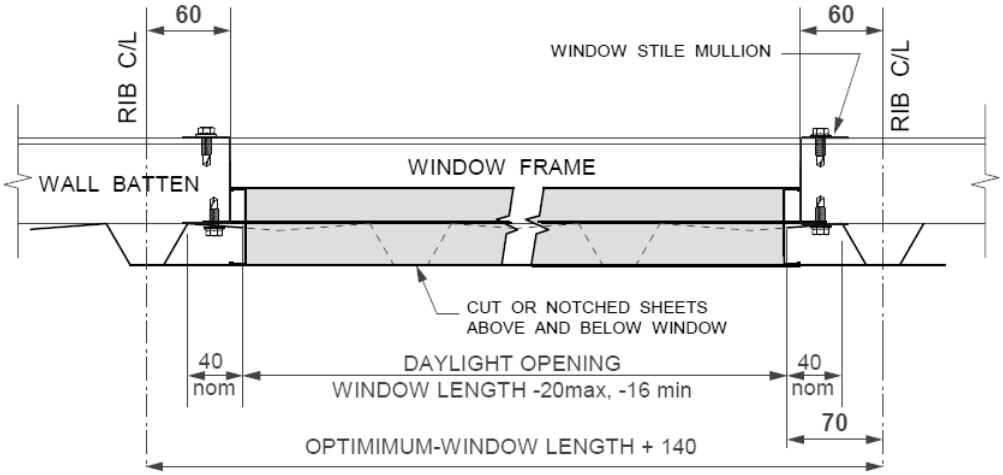
- 4 x JTS96 - window mullion to 96mm top hat connection cleats.
- 6 x NH10/5 - 4-angle brackets to fix C100 members to vertical window mullion, 2-brackets to fix stiles to C150 fascia (if required).
- 40 x TEK20 - tek screws for fastening cleats to window mullions, window sill and window heads.
- 8 x TEK2 - wafer head tek screws for fastening window fin to window framing members. Generally one Tek2 per corner and one supplied intermediate of each corner.
- ? x TEK1 (or Tek16) - for fixing of wall cladding to window head, sill, and window mullions.
- 2 x Mullions (window stiles) - 96 x 35 x 1mm thick folded channel, supplied in 2680mm lengths.
- 2 x C100's (window head and sill) - blank unpunched Cee channel, supplied as window length + 10mm.

## Window Location:

It is recommended not to locate the window next to a sheet lap so when the wall sheets are cut, only a small width of sheeting is left on the lap. It is preferable to locate the window so that the lap is actually cut out. Refer to the diagram below.




**RECOMMENDED LOCATION FOR WINDOW**



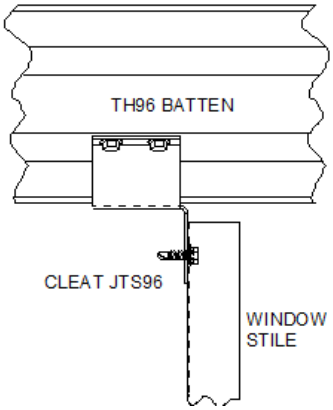

**LOCATING WINDOW IN HI-PROFILE WALL CLADDING DETAIL**

## Aluminium Sliding Windows (continued)

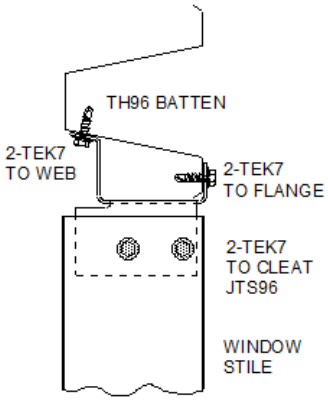
### Procedure:

1) Fix wall sheeting up window location, i.e. the first notched wall sheet. Check with spirit level to ensure this sheet is plumb.
2) Cut window stiles (96 x 35) to fit between side wall battens above and below the desired window location. Measure clear distance and deduct 10mm from the measured dimension. Cut mullions to this length.
3) Carefully locate window stiles so that window will fit snugly within stile webs. Check by using a measuring tape.
   Fit JTS96 cleat to both ends of each mullion with 2 @ Tek20's. Then fix stiles to battens with JTS96 cleat and 4 @ Tek20's. Refer to details below. Ensure the stiles are plumb with a spirit level.
4) Position window sill and head to suit window height. Use cleats NH10/5 and 4 @ Tek20's at each end. Locate sill and head so that window can freely fit into boxed frame. Ensure that both window sill and head are perfectly level so that sliding window sashes can freely slide. Again, use a spirit level for checking.
5) Position window into boxed frame and fix through window fin with Tek2 fastener at each corner. Further fasten window fins with Tek2 fasteners into sill, head, and stiles at intermediate points between the corners. The window is now self-supporting.
6) Carefully cut remaining wall sheets around window, and ensure allowance is made for any neoprene sill flashing generally, walls sheets below the window are undercut 6mm for the neoprene sill flashing.
   Fix wall sheeting to framing members with wall cladding tek screws-Tek1's for non-cyclonic, Tek16's for cyclonic.

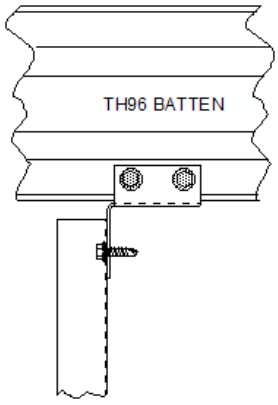
### Mullion to Batten & Rolled Section Details



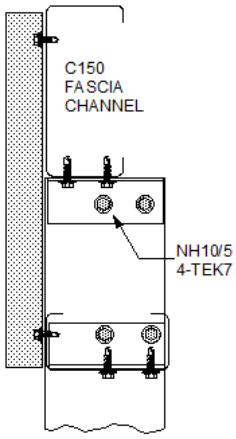

**OUTSIDE VIEW**



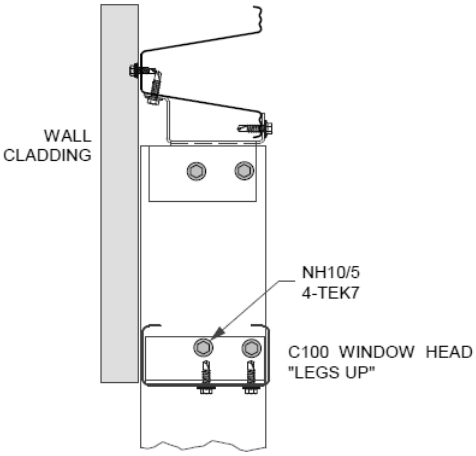

**SECTION**



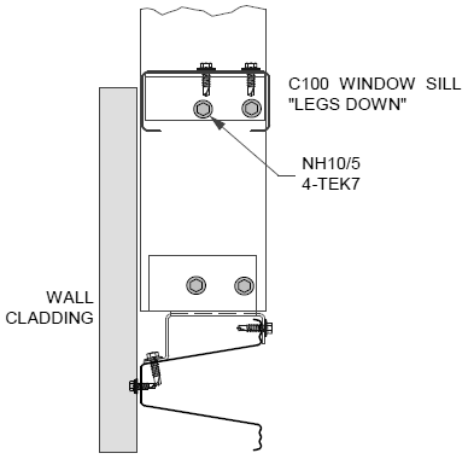

**INSIDE VIEW**




**WINDOW STILE TO C150 FASCIA**




**WINDOW HEAD TO STILE DETAIL**




**WINDOW SILL TO STILE DETAIL**

# Annexes

## General

Premier TH96 Annexes are a step down design and can only connect to the parent Premier TH96 column.

Minimum loft heights between the parent Premier TH96 fascia and the connection height of the annexe have been maintained so that the annexe does not interfere with the Premier TH96 fascia or the Premier TH96 knee cleats.

The Premier TH96 annexe framing for main columns and rafters is available only from 150's, C200's & C250's. However, C300 & C350's may be required for end wall mullions. All roof and wall battens are from 96mm Top Hat battens.

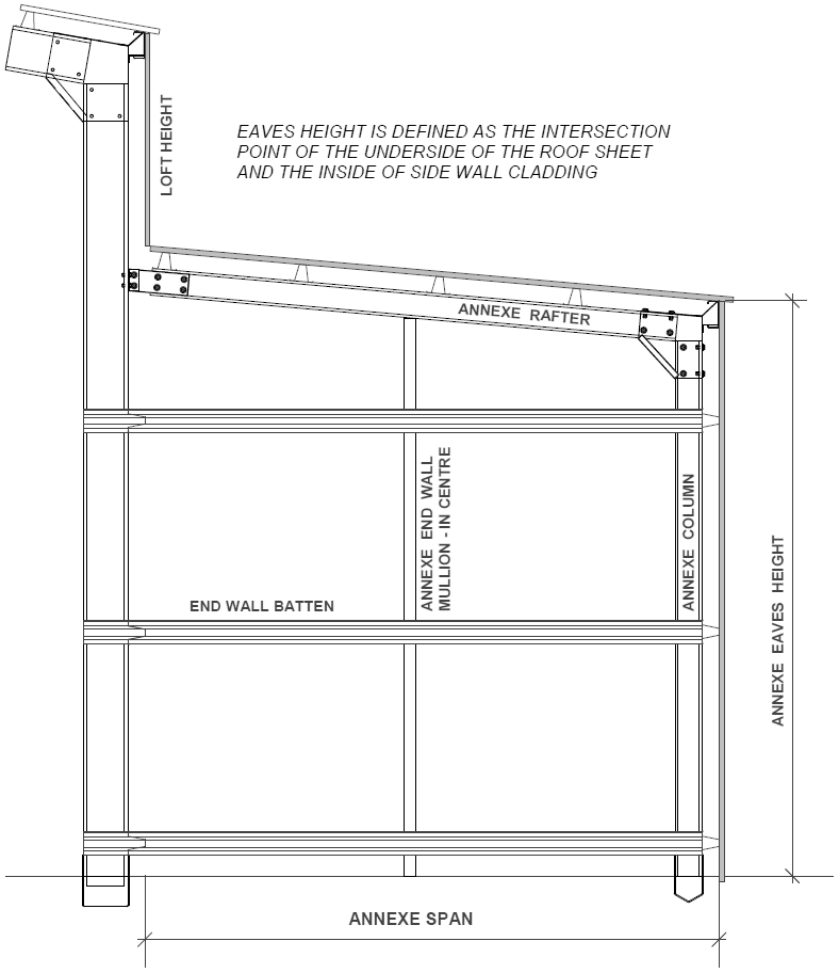
The Premier TH96 annexe may have its floor stepped down from the parent Premier TH96 building and is conditional upon the parent Premier TH96 building's cladding configuration, as well as the annexe's cladding configuration. Reference for this condition is available on the concrete plans supplied.

All options that are available in the parent Premier TH96 building are available in the annexe with the only exception being wide bay beams. All these options have the same connections.

Premier TH96 annexes have a roof pitch of 5° only.

All connections on the Premier TH96 annexes are the same as the parent Premier TH96 wherever possible, with variations to the components only to suit the different roof pitch.

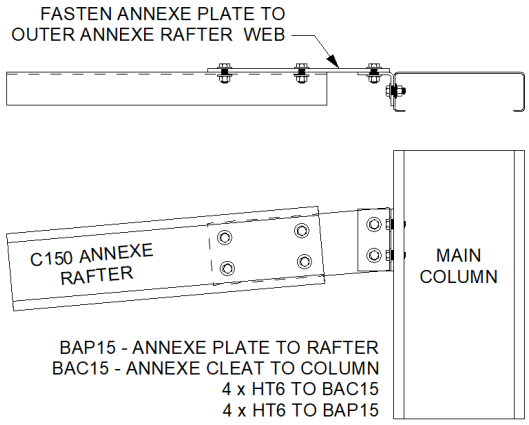
Annexe columns are located on the same centrelines as the parent Premier TH96 columns, and for all internal frames, the cast in straps are cast in central to those lines. However, variations to the cast in strap location may happen on the annexe end frames due to differences in flange widths between the Premier TH96 and the Premier TH96 annexe columns. On end frames, the Premier TH96 annexe frame is to finish flush with the external surface of the Premier TH96 end frame.



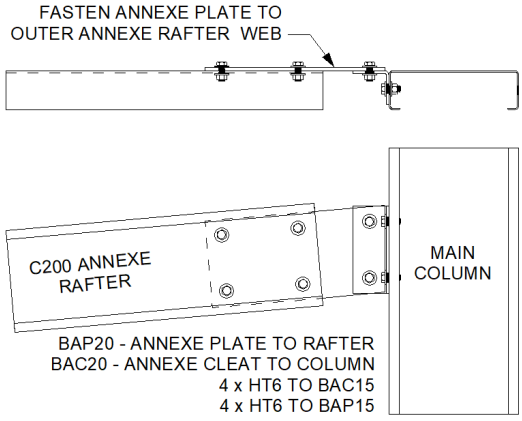
# Premier TH96 Annexe Arrangement

## Intermediate Annexe Rafter to Column Connection

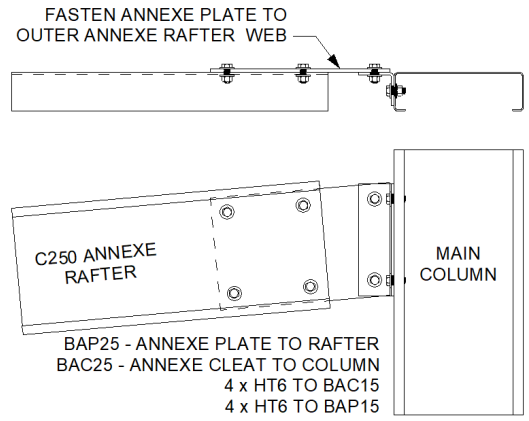
All annexe rafter connections to the parent Premier TH96 column flange. A minimum step down distance between the parent Premier TH96 and the annexe is necessary.
The intermediate annexe rafter to column connection is the same for all section sizes. Each connection consists of an "L" shaped angle or bracket that fixes to the column flange. A flat plate is fastened to the annexe rafter web and is also bolted to the "L" shaped column flange cleat. All connections include 8 x HT6 (M16 x 40) bolts.



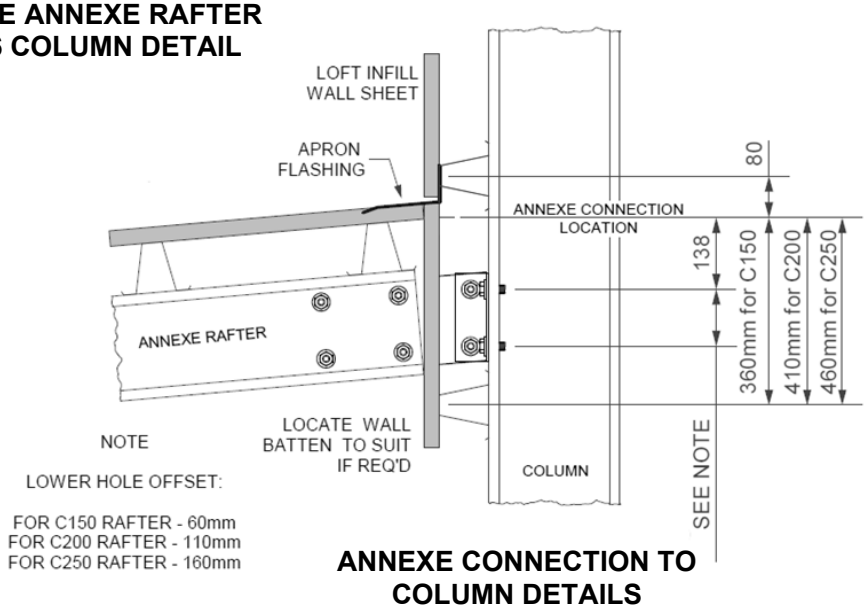

**C150 INTERMEDIATE ANNEXE RAFTER TO PREMIER TH96 COLUMN DETAIL**




**C200 INTERMEDIATE ANNEXE RAFTER TO PREMIER TH96 COLUMN DETAIL**




**C250 INTERMEDIATE ANNEXE RAFTER TO PREMIER TH96 COLUMN DETAIL**




**ANNEXE CONNECTION TO COLUMN DETAILS**

## End Frame Annexe Rafter to Column Connection

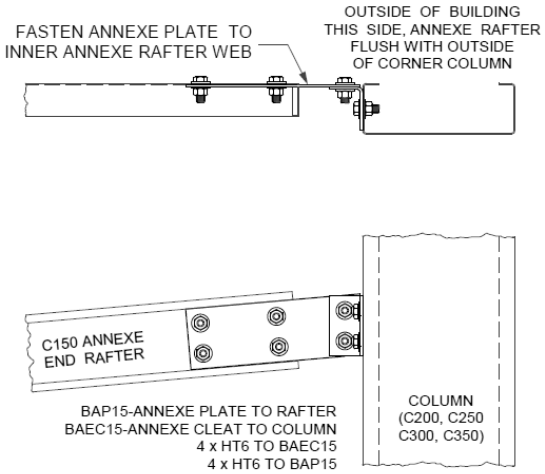
All end frame annexe rafters connect to the parent Premier TH96 column flange. The parent Premier TH96 column may be a main frame Premier TH96 column, or a Premier TH96 corner column.

The end frame annexe rafter to column connection is similar to the intermediate frame connection. Each connection consists of an "L" shaped angle or bracket that fixes to the column flange. A flat plate is fastened to the annexe rafter web and is also bolted to the "L" shaped column flange cleat. All connections include 8 x HT6 (M16 x 40) bolts.

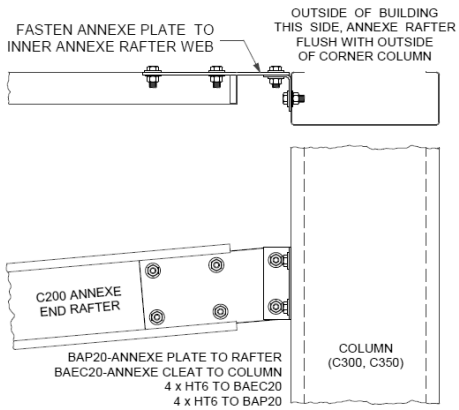
The cleat that fixes to the Premier TH96 column has two horizontally elongated holes that allows for all possible column flange dimensions.

The outer surface of the annexe rafter and column must finish flush with the parent Premier TH96 column.

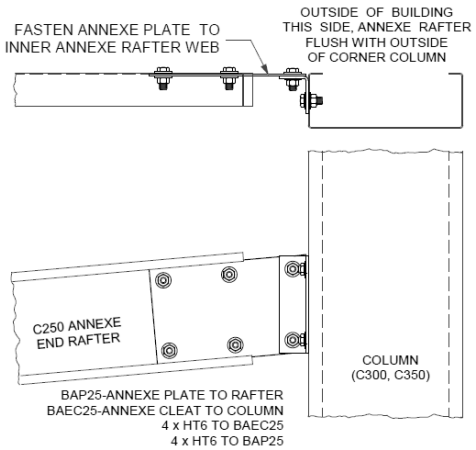
If the end frame annexe rafter has the same width as the parent Premier TH96 column, use the same connections as an intermediate frame. If the flange widths differ, specific connections are required so that the annexe frame finishes flush with the outer surface of the parent Premier column. In this instance, the orientation of the end annexe frame must be orientated opposite hand to the Premier TH96 column.




**C150 END FRAME ANNEXE RAFTER TO PREMIER TH96 COLUMN DETAIL**




**C200 END FRAME ANNEXE RAFTER TO PREMIER TH96 COLUMN DETAIL**




**C250 END FRAME ANNEXE RAFTER TO PREMIER TH96 COLUMN DETAIL**

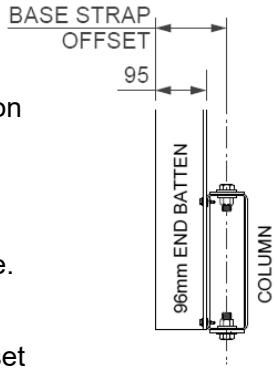
**ANNEXE COLUMN BASE STRAP OFFSET:**
Some Premier TH96Annexe columns may have different flange widths to the parent Premier TH96 column.

All annexe columns and rafters must finish flush with the parent column.

All concrete plans will indicate the concrete footings are on a common centre line.

However, the location of the base strap may be offset from the centreline.

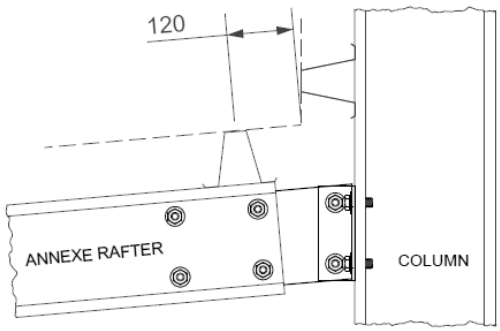
Refer to the generated concrete details and offset dimensions.



## Special Annexe Connection Details and Notes

### Upper Roof Batten Offset

The uppermost roof batten of Premier TH96 annexe roofs is to be offset 120mm. This dimension is measured from the intersection of the top of the roof batten and the external face of the side wall batten.



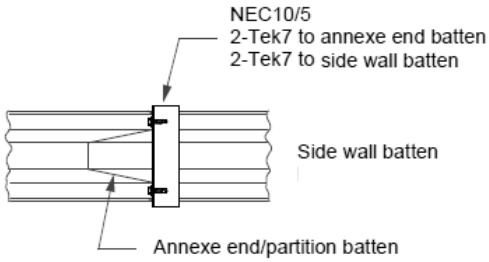

**UPPERMOST ROOF BATTEN OFFSET DETAIL**

### End Wall/Partition Wall to Premier TH96 Side Wall

If an annexe is shorter in length to the parent Premier TH96, the annexe end walls are sheeted, and the parent Premier TH96 side wall is sheeted below the annexe roof, a cleat is required to fasten the annexe end wall batten to the Premier TH96 side wall batten.

Use cleat NEC10/5, and fix to annexe end batten lips flush at the end with 2 x Tek7s. Then fasten end wall batten to side wall batten with another 2-Tek7's.

Use the above cleat and fasteners for any internal annexe partition wall.

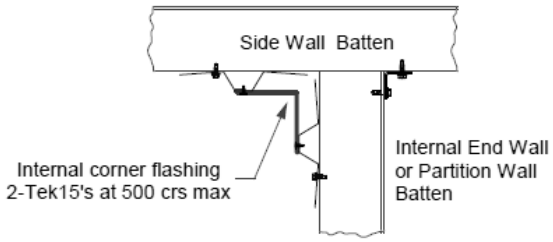



**ANNEXE END WALL BATTEN TO Premier TH96 SIDE WALL BATTEN DETAIL**

### Internal Corner/Partition to Side Wall Flashing Detail

If an annexe is shorter in length to the parent Premier TH96, the annexe end walls are sheeted, and the parent Premier TH96 side wall is sheeted below the annexe roof, an internal corner flashing is required at this intersection.

Fix flashing to both claddings with 2-Tek15's at 500mm maximum



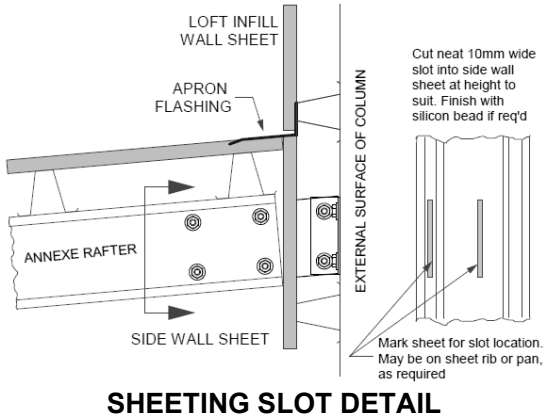

**INTERNAL CORNER FLASHING DETAIL**

### Slot in Sheeting for Annexe Cleat Penetration

If an annexe is added to a Premier TH96, and side wall sheeting is required to the Premier TH96 under the annexe, a slot needs to be cut into the sheeting below the annexe roof to allow the annexe connection cleats to fix to the annexe rafter.
A slot in sheeting to suit is required to be cut in on site.

Careful measuring & marking of the sheet of sheet for the slot location will enhance appearance. A slot greater than 6mm wide but less than 10mm will suffice. If required, run a bead of silicon around the rectangular slot to further inhibit water penetration.

DO NOT USE AN ABRAISIVE CUTTING WHEEL OR DISK TO CUT THIS SLOT USE TIN SNIPS OR A NIBBLER.




**SHEETING SLOT DETAIL**

# Premier TH96 supplementary notes

## Connection Cleats

### General

The TH96 skillion offers roof pitches of 3° 5° & 7.5°
Note that the 3° roof pitch is limited to spans up to 10m and for Hi-Profile roof cladding only.

All connection cleats should be supplied from Endurance's suppliers with a part number for easy identification. The location of the cleats within the framing connection can be found in this assembly guide. Quantity of components can be referenced on the Bill of Materials.
These cleats are specifically used for Skillion Premier TH96 buildings. The majority of remaining components used in Skillion Premier TH96 buildings can be identified with the main Premier TH96 Assembly Guide.

A list of cleats for connections is displayed in the front section of this guide under connection cleats.

## Column to Rafter Lower Knee Connection

All columns to rafter knee connections consist of a series of HT bolts and #14 tek screws.
All lower knee connections include Tek20 fine thread tek screws, which fix through the bottom lip of the knee cleat, and into the inner lip of each column or rafter.
Column and rafter connections consist of same size sections-with no variations, i.e., for a C150 column, the rafter must be a C150. Gauge variations will occur, but never section size variations.

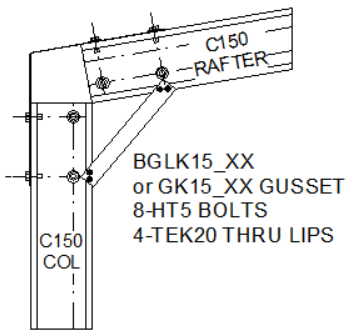
For C150 knees, use knee cleat BGLK15_XX, GK15_XX 8-M16 x 40 HT bolts (HT6)-2 per column web, 2 per rafter web, 2 per column flange, 2 per rafter flange, -2 x Tek 20 through column inner lip and 2 x Tek 20 through rafter inner lip.

For C200 knees, use knee cleat BGLK20_XX, GK20_XX 10-M16 x 40 HT bolts (HT6)-3 per column web, 3 per rafter web, 2 per column flange, 2 per rafter flange, -4 x Tek 20 through column inner lip, 2 x TEK 20 on column outer lip, 4 x Tek 20 on rafter inner lip and 2 x Tek 20 through rafter outer lip. Locate a zed stiffener cleat (GZ20) under the column or rafter lips at 185mm from each end.

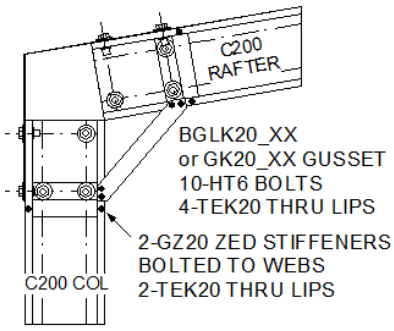
For C250 knees, use knee cleat BGLK25_XX, GK25_XX 10-M16 x 40 HT bolts (HT6)-3 per column web, 3 per rafter web, 2 per column flange, 2 per rafter flange, -4 x Tek 20 through column inner lip, 2 x TEK 20 on column outer lip, 4 x Tek 20 on rafter inner lip and 2 x Tek 20 through rafter outer lip. Locate a zed stiffener cleat (GZ25) under the column or rafter lips at 185mm from each end.

For C300 knees, use knee cleat BGLK30_XX, GK30_XX 12-M16 x 40 HT bolts (HT6)-4 per column web, 4 per rafter web, 2 per column flange, 3 per rafter flange, -4 x Tek 20 through column inner lip, 2 x TEK 20 on column outer lip, 4 x Tek 20 on rafter inner lip and 2 x Tek 20 through rafter outer lip. Locate a zed stiffener cleat (GZ30) under the column or rafter lips at 185mm from each end.

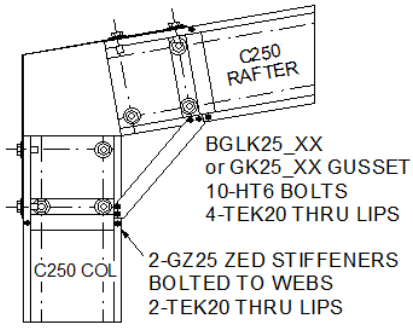
For C350 knees, use knee cleat BGLK35_XX, 12-M16 x 40 HT bolts (HT6)-4 per column web, 4 per rafter web, 2 per column flange, 2 per rafter flange, -4 x Tek 20 through column inner lip, 2 x TEK 20 on column outer lip, 4 x Tek 20 on rafter inner lip and 2 x Tek 20 through rafter outer lip. Locate a zed stiffener cleat (GZ35) under the column or rafter lips at 185mm from each end.



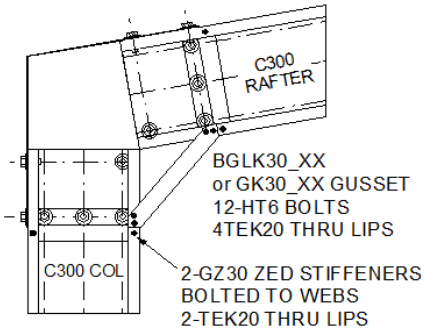

**C150 KNEE CONNECTION**



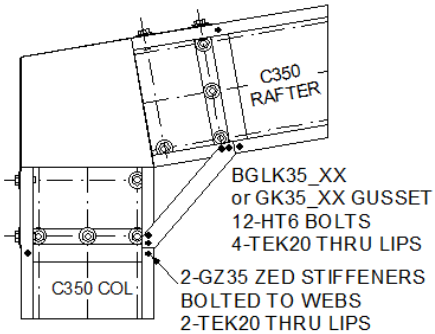

**C200 KNEE CONNECTION**




**C250 KNEE CONNECTION**




**C300 KNEE CONNECTION**




**C350 KNEE CONNECTION**

## Column to Rafter Upper Knee Connection

All columns to rafter knee connections consist of a series of HT bolts and #14 tek screws.
All lower knee connections include Tek20 fine thread tek screws, which fix through the bottom lip of the knee cleat, and into the inner lip of each column or rafter.
Column and rafter connections consist of same size sections-with no variations, i.e., for a C150 column, the rafter must be a C150. Gauge variations will occur, but never section size variations.

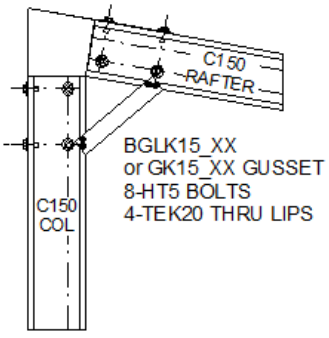
For C150 knees, use knee cleat BGUK15_XX, 8-M16 x 40 HT bolts (HT6)-2 per column web, 2 per rafter web, 2 per column flange, 2 per rafter flange, -1 x Tek 20 through column inner lip and 1 x Tek 20 through rafter inner lip. Where XX is displayed as a specific roof pitch.

For C200 knees, use knee cleat BGUK20_XX, 10-M16 x 40 HT bolts (HT6)-3 per column web, 3 per rafter web, 2 per column flange, 2 per rafter flange, -2 x Tek 20 through column inner lip, 1 x TEK 20 on column outer lip, 2 x Tek 20 on rafter inner lip and 1 x Tek 20 through rafter outer lip. Locate a zed stiffener cleat (GZ20) under the column or rafter lips at 185mm from each end. Where XX is displayed as a specific roof pitch.

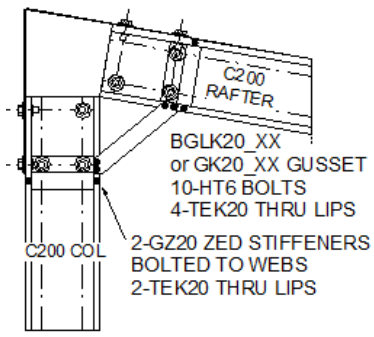
For C250 knees, use knee cleat BGUK25_XX, 10-M16 x 40 HT bolts (HT6)-3 per column web, 3 per rafter web, 2 per column flange, 3 per rafter flange, -2 x Tek 20 through column inner lip, 1 x TEK 20 on column outer lip, 3 x Tek 20 on rafter inner lip and 1 x Tek 20 through rafter outer lip. Locate a zed stiffener cleat (GZ25) under the column or rafter lips at 185mm from each end. Where XX is displayed as a specific roof pitch.

For C300 knees, use knee cleat BGUK30_XX, 12-M16 x 40 HT bolts (HT6)-4 per column web, 4 per rafter web, 2 per column flange, 2 per rafter flange, -3 x Tek 20 through column inner lip, 1 x TEK 20 on column outer lip, 3 x Tek 20 on rafter inner lip and 1 x Tek 20 through rafter outer lip. Locate a zed stiffener cleat (GZ30) under the column or rafter lips at 185mm from each end. Where XX is displayed as a specific roof pitch.

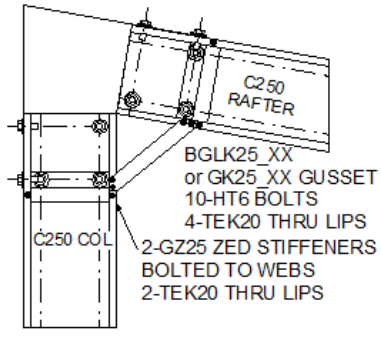
For C350 knees, use knee cleat BGUK35_XX, 12-M16 x 40 HT bolts (HT6)-4 per column web, 4 per rafter web, 2 per column flange, 2 per rafter flange, -3 x Tek 20 through column inner lip, 1 x TEK 20 on column outer lip, 3 x Tek 20 on rafter inner lip and 1 x Tek 20 through rafter outer lip. Locate a zed stiffener cleat (GZ35) under the column or rafter lips at 185mm from each end. Where XX is displayed as a specific roof pitch.



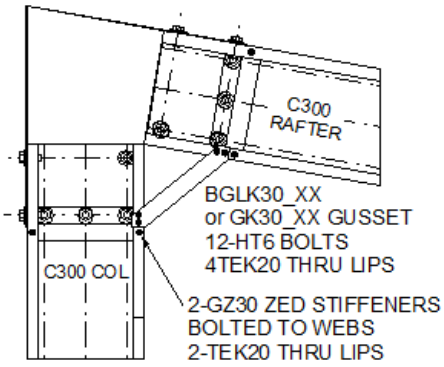

**C150 UPPER KNEE CONNECTION**



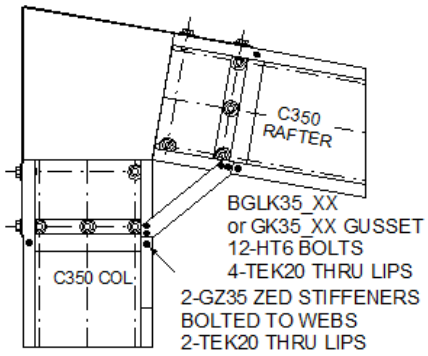

**C200 UPPER KNEE CONNECTION**




**C250 UPPER KNEE CONNECTION**




**C300 UPPER KNEE CONNECTION**



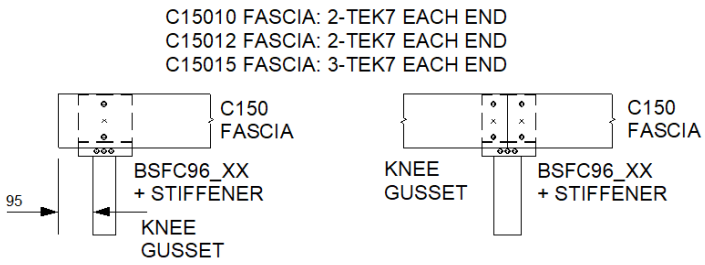

**C350 UPPER KNEE CONNECTION**

## Fascia Connection

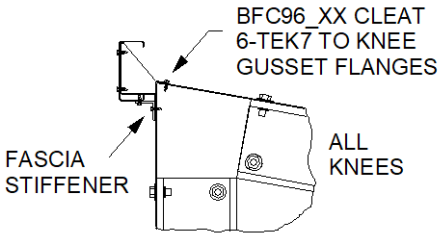
All Skillion Premier Fascia's consist of C150 rolled sections that are unpunched. Upper Knee Fascia cleats - BSFC96_XX - are tek screwed to knee cleats with a total of 6-Tek7 tek screws through pilot holes in BSFC96_XX. The BSFC96_XX cleat is used on all Skillion frame types.
C150 fascia channels are self-locating for height and are simply hung over the BSFC96_XX cleats. Fascia channels do not overlap and are simply butted together. On side wall corners, the fascia channels will extend 95mm further past the outer column flange.
For C15010 & C15012 fascia channels, use 2 x Tek7's through fascia web into fascia cleat each end.
For C15015, C15019 & C15024 fascia channels use 3 x Tek7's through fascia web into fascia cleat each end.
Where XX is displayed as a specific roof pitch.

## Fascia Stiffener

All Skillion Premier TH96 fascia's require a 50x50x3mm angle bracket 100mm long fastened to fascia flange to restrain against movement when roof bracing is fixed - and is to be tek screwed through the BSFC96_XX to the knee cleat via the pilot holes in BSFC96_XX.



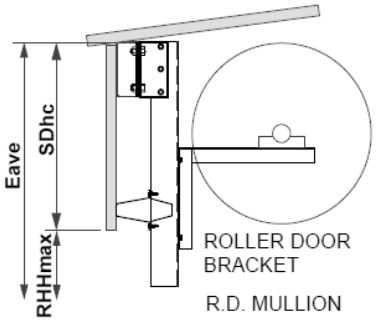

**END FRAME** **INTERNAL FRAME**




**END or INTERNAL FRAME UPPER KNEE**

## Maximum Roller Door Head Height Location

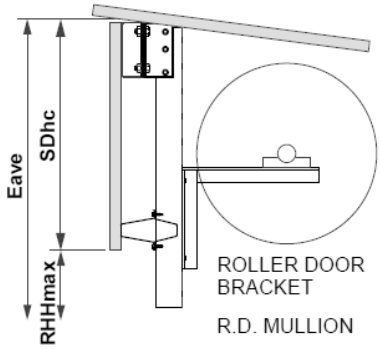
Skillion Premier TH96 side wall maximum roller head heights vary between upper and lower eaves. The clearance requirements for the roller door drums in both cases are noted in the below diagrams.




**RHHmax = EAVE - SDhc**

**SDhc Values**
Type A Domestic = 370
Type AA Domestic = 520
Type B Industrial = 520
Type C Industrial = 620 (Steeline supply only)

**MAXIMUM ROLLER DOOR HEAD HEIGHT FOR LOWER EAVES SIDE WALL**




**RHHmax = EAVE - SDhc**

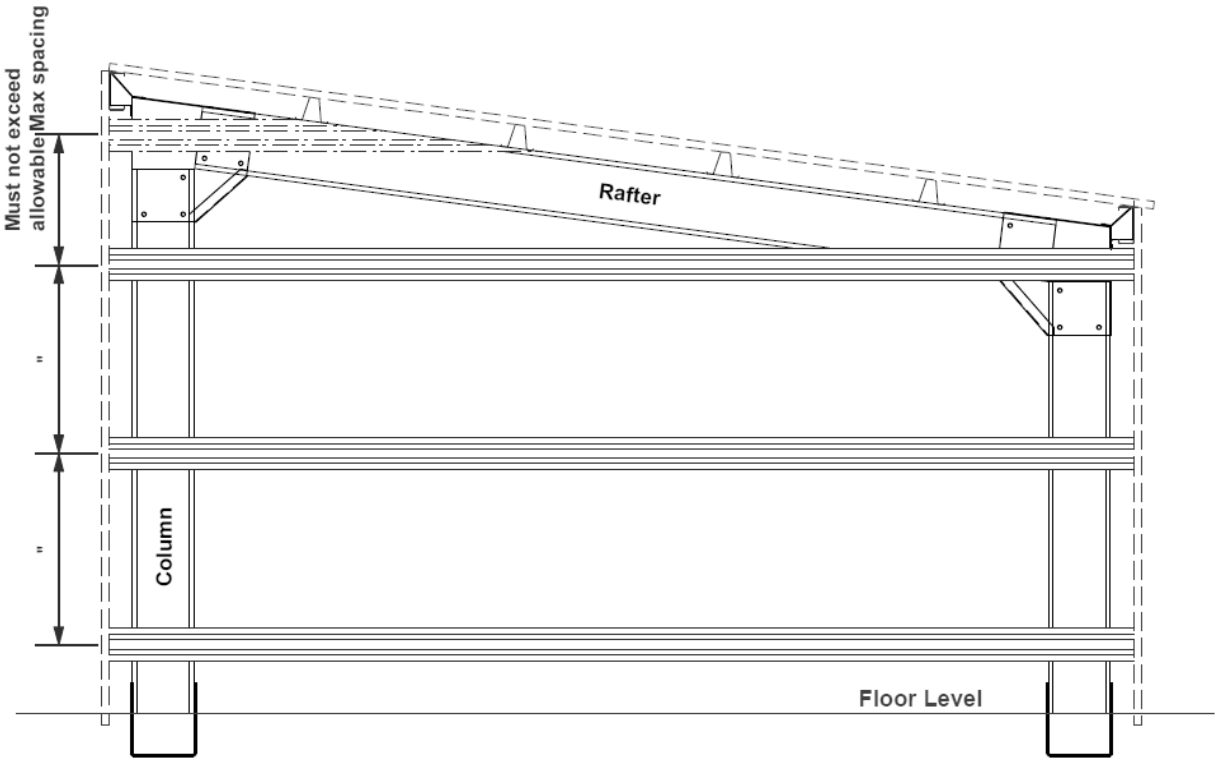
**SDhc Values**
Type A Domestic = 490
Type AA Domestic = 640
Type B Industrial = 640
Type C Industrial = 740 (Steeline supply only)

**MAXIMUM ROLLER DOOR HEAD HEIGHT FOR UPPER EAVES SIDE WALL**

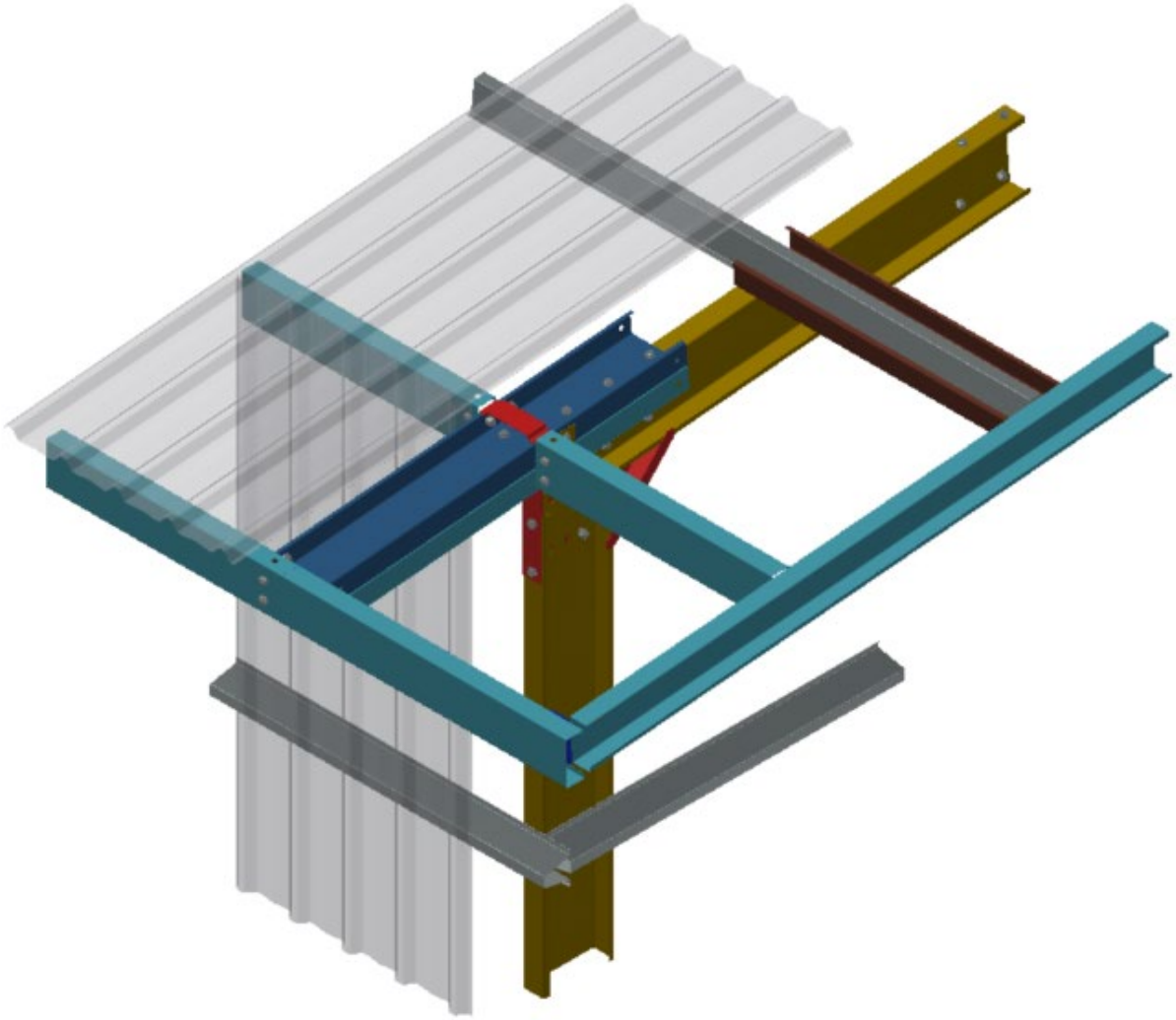
## Optional Additional Girt Location

### General

In some instances, additional wall battens are required on the upper side and end walls. Generally, it can be fixed midpoint between the fascia purlin and batten level with the lower side wall. However, it can be located at any point as long as the maximum allowable batten spacing has NOT been exceeded.
Refer to engineering documentation for maximum batten spacing.



## Premier Overhang Supplement



Eave overhangs can be formed on both the sides and ends of a Premier parent building and its annexes.

Overhangs can be added to the side walls and end frames with a span ranging from a minimum 300mm to a maximum of 800mm.

Overhangs are available in a Premier with a maximum roof pitch of 15°.

The side overhangs consist of an overhang strut comprising of punched back-to-back C200 sections bolted to the top flange of the knee connection.

Side wall overhangs will consist of both inner and outer fascia's supported by the side overhang strut.

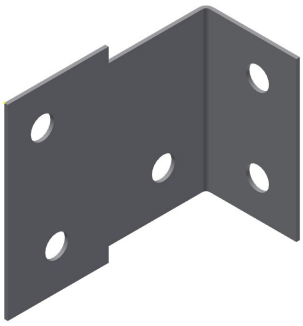
End overhangs will consist of the TopSpan 96 purlin extending past the end frame and nested with a C200 section which will enable end wall sheeting and flashings to be neatly trimmed to suit the roof pitch.

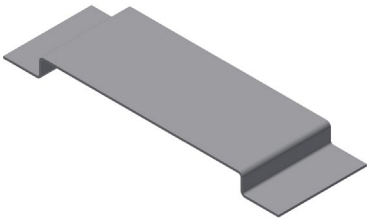
The following section will attempt to cover onsite construction of the side wall and end frame overhangs.

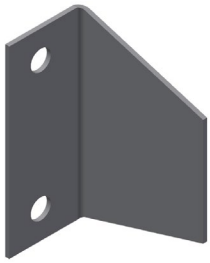
## Connection Cleats

### General

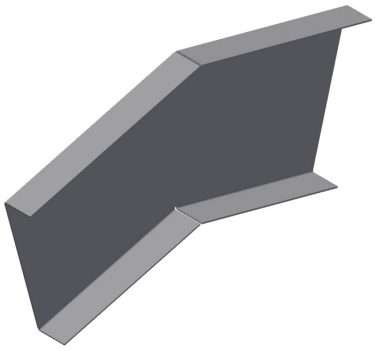
All new connection cleats are listed below and should be supplied from Ranbuild's suppliers with a part number for easy identification. The location of the cleats within the framing connection can be found in this assembly guide. Quantity of components can be referenced on the Bill of Materials.

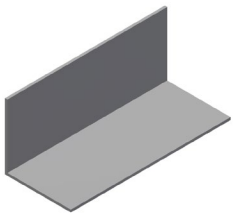
| OVERHANG FASCIA CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | **BGF_XXL** | Suits C150 fascia cleat<br>XX designates roof pitch |
| | **BGF_XXR** | Suits C150 fascia cleat<br>XX designates roof pitch |

| OVERHANG STRUT CLOSER CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | **BGOHC** | Suits C200 overhang strut<br>Closer cleat |

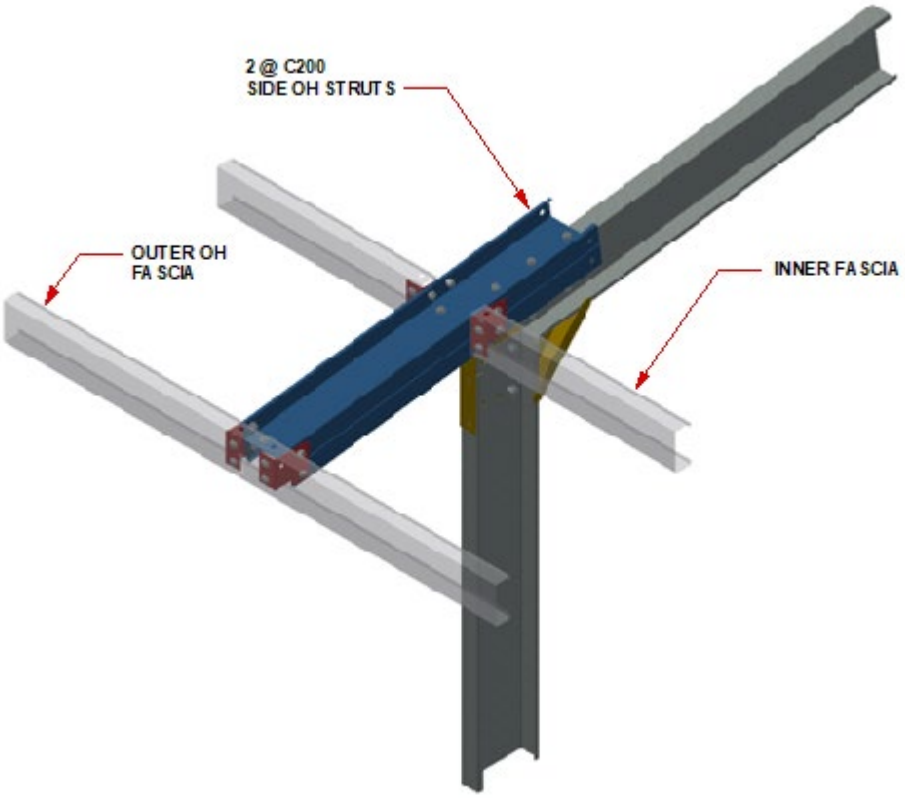
| OVERHANG STRUT CLOSER CLEAT | MARK | DESCRIPTION |
|---|---|---|
| <br>ALL CLEATS SIMILAR<br>SIZE AND HOLE PLACEMENT MAY DIFFER | **BGOHE** | Suits C150 end overhang<br>fascia |

| CLAMP CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  | CL29P | Suits C150 end overhang fascia |

| END OVERHANG FASCIA APEX CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  ALL CLEATS SIMILAR ROOF PITCH MAY DIFFER | NA15_XX | Suits C150 end overhang fascia XX designates roof pitch |

| CLAMP CLEAT | MARK | DESCRIPTION |
|---|---|---|
|  | NH10_5 | Suits C200 end overhang Strut to end fascia |

## Side Wall Eave Overhangs



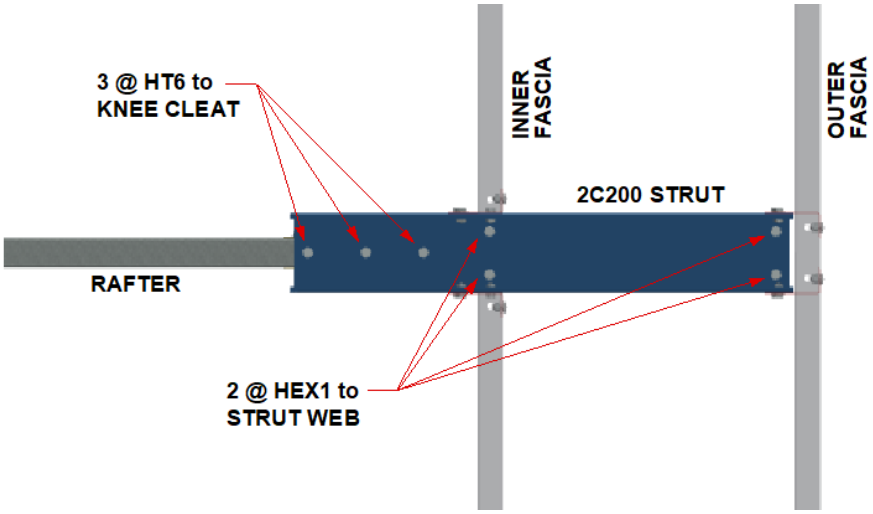

Side wall overhangs consist of a punched back-to-back (2 @ C200's) strut mounted on the rafter/column knee cleat top flange.

The Premier side wall overhangs can vary in span from 300mm minimum to 800mm maximum measured horizontal from the slab edge or side wall batten outer face.

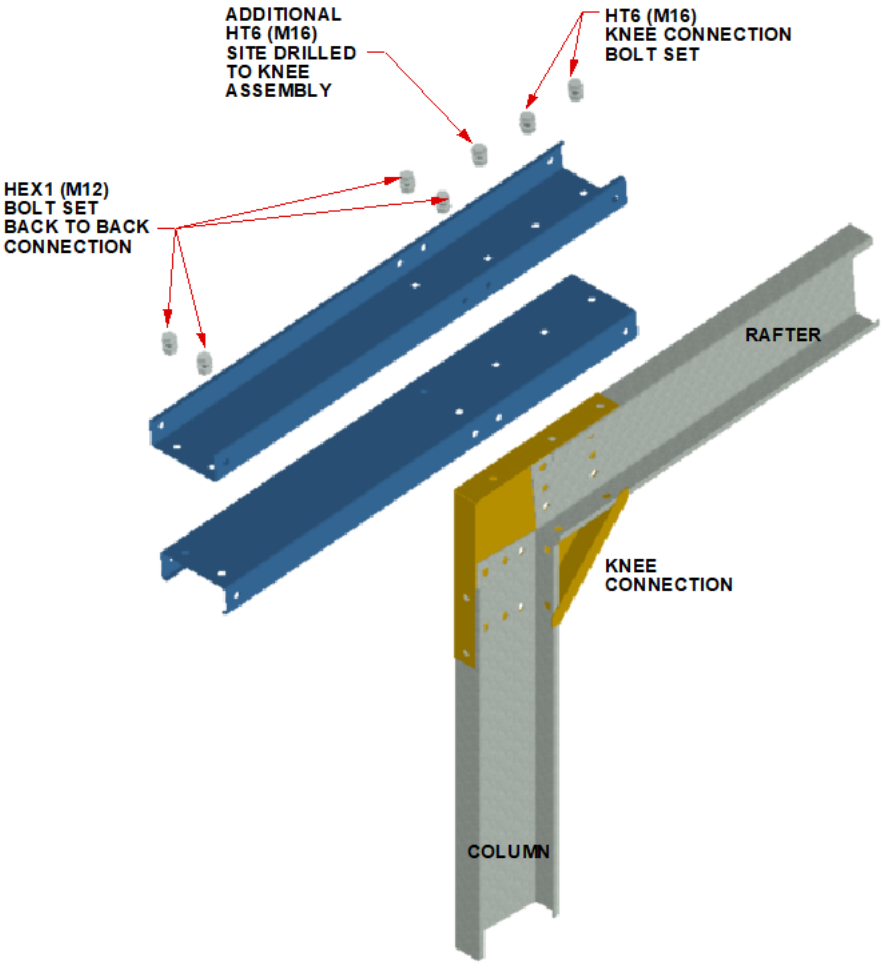
The side overhang strut is bolt connected to the top flange of the knee cleat using the 2 supplied knee connection top flange bolts. An additional M16 bolt and washer set (HT6+2 @ W16 washers) is supplied to be fitted to a drilled location of the overhang strut through the knee cleat.
Note that the additional hole will need to be site drilled through the overhang strut and knee connection in a location as close as possible to the vertical edge (corner) of the knee connection.

## General Component Construction

### Strut Connection



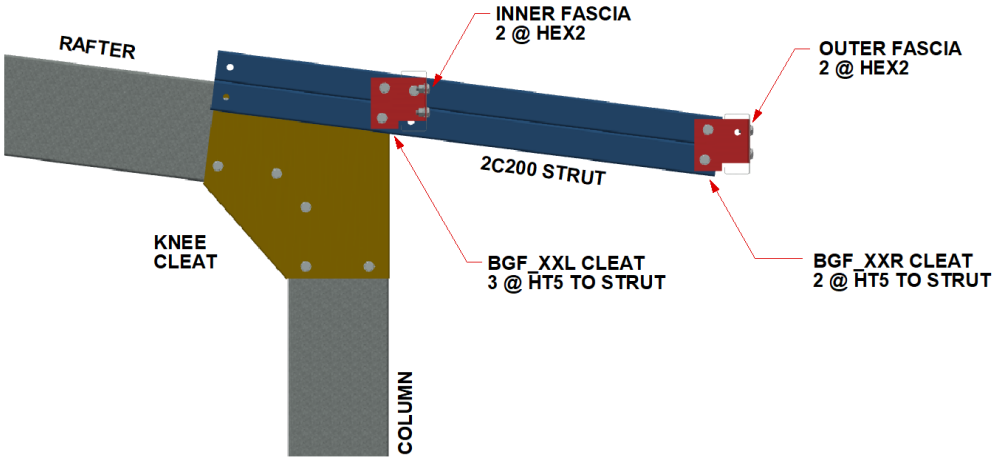

The connection of the overhang strut uses 2 @ HT6 bolts supplied in the knee connection to mount to the knee cleat top flange. An additional 1 @ HT6 bolt is required to the top flange to make a quantity of 3 @ HT6's in total for the connection. The additional HT6 bolt will require site drilling to locate and should be fitted as close to the knee cleat outer corner as possible.
Overhang struts also have punched web holes located at both the inner and outer fascia locations. These punch holes are provided to form a friction grip connection to stabilise the back-to-back strut and should be connected with HEX1 bolts. (4 @ HEX1's in total)

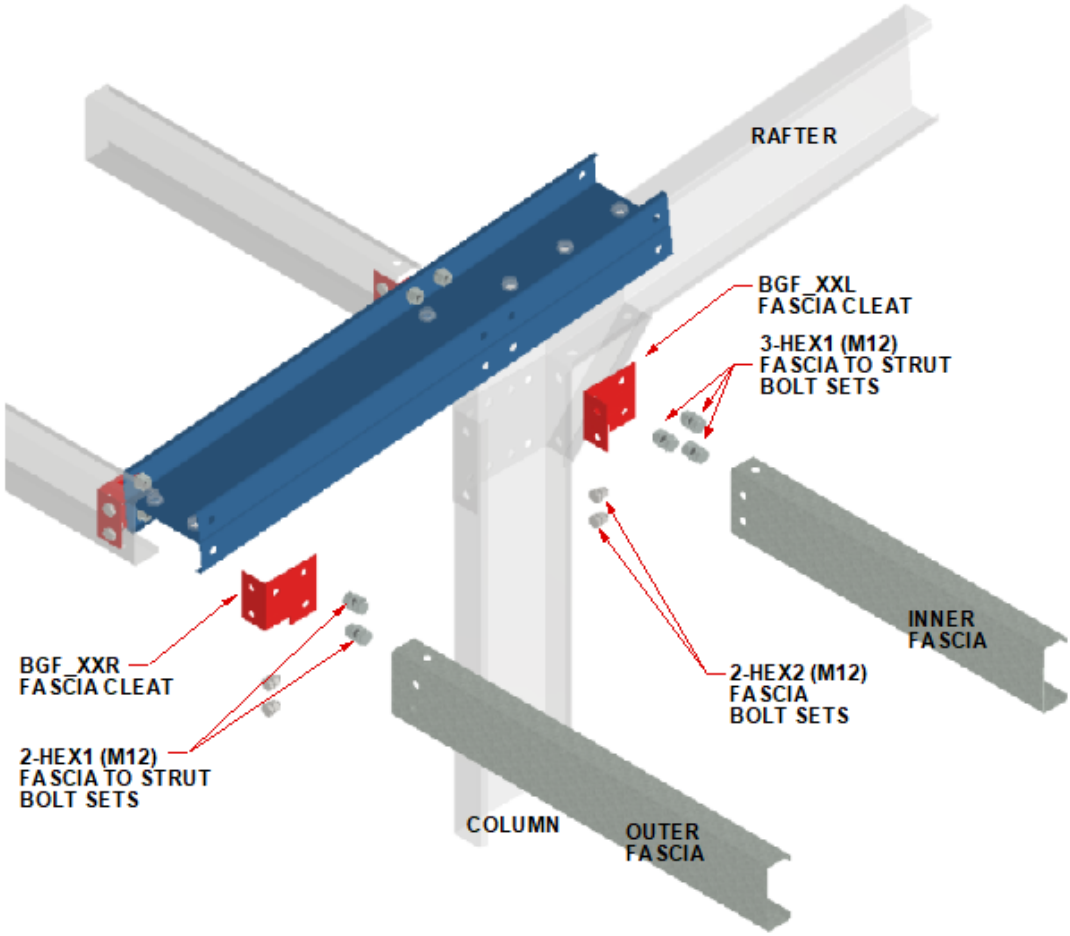


## Fascia Connections

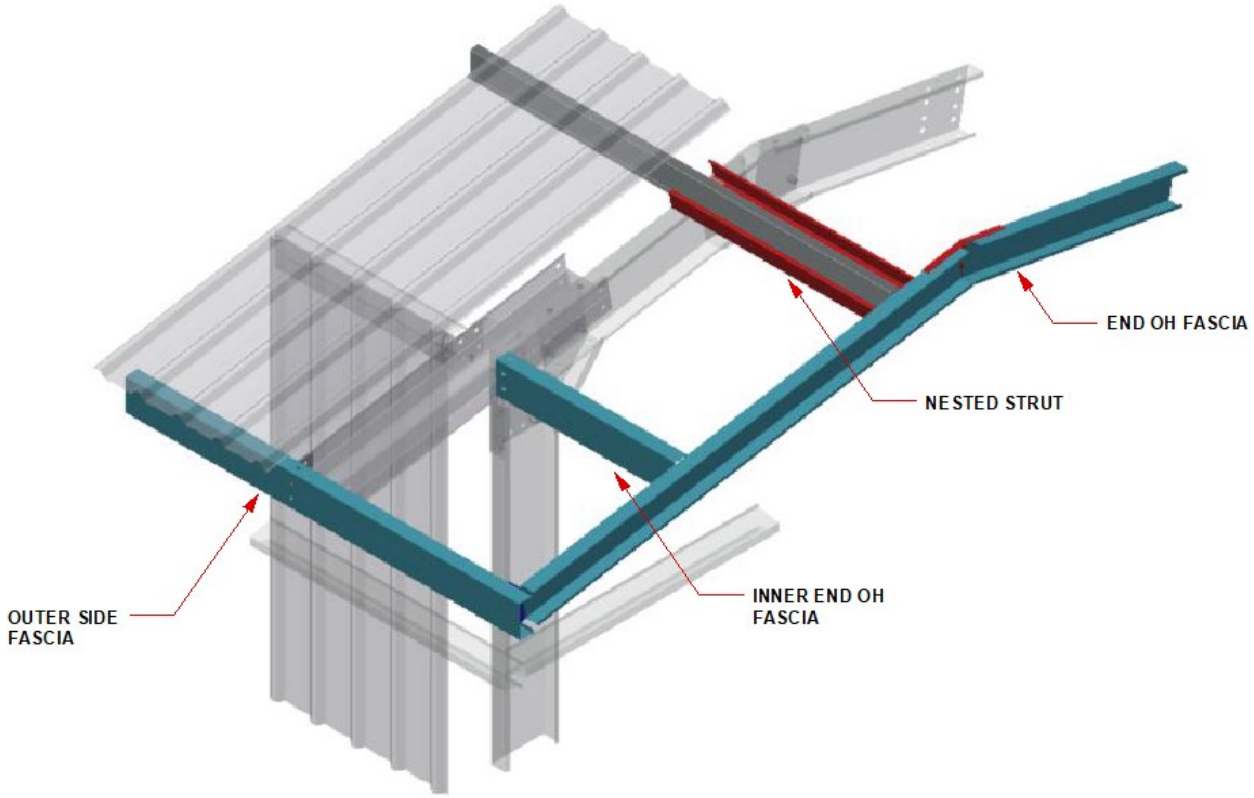
Inner fascia's are bolted to the side overhang strut using the BGF_XX cleat on either side of the strut. XX designates the roof pitch and is specific to the pitch of the parent or annexe in each location.
The inner fascia cleat is connected to the overhang strut utilising 3 @ HT5 bolts to each cleat at pre punched holes.
The Inner fascia's are connected to the BGF_XX cleat using 2 @ dome head bolts (HEX2) to each fascia.

The outer fascia's are similarly connected to the ends of the overhang strut. The cleats are used on opposite sides of the strut to the internal fascia. The BGF_XX cleats are connected to the overhang strut with 2 @ HT5 bolts. Fascia's are connected to the BGF_XX cleat using 2 @ dome head bolts (HEX2) to each fascia, similar to the inner fascia.



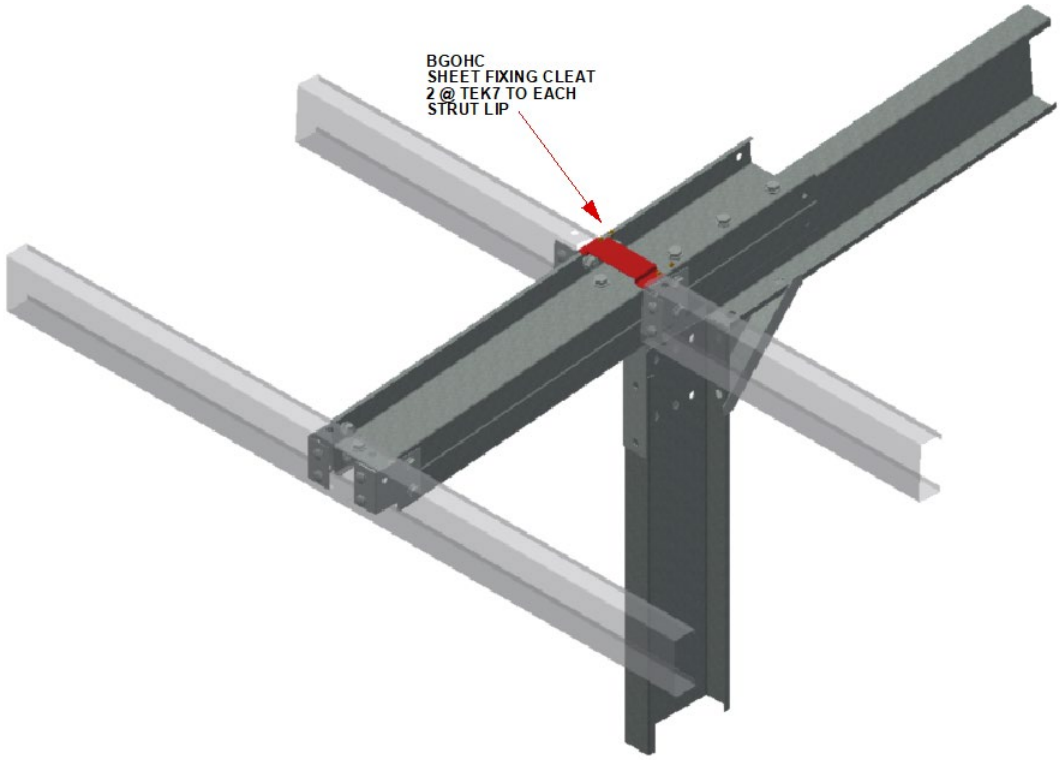



## End Wall Overhangs



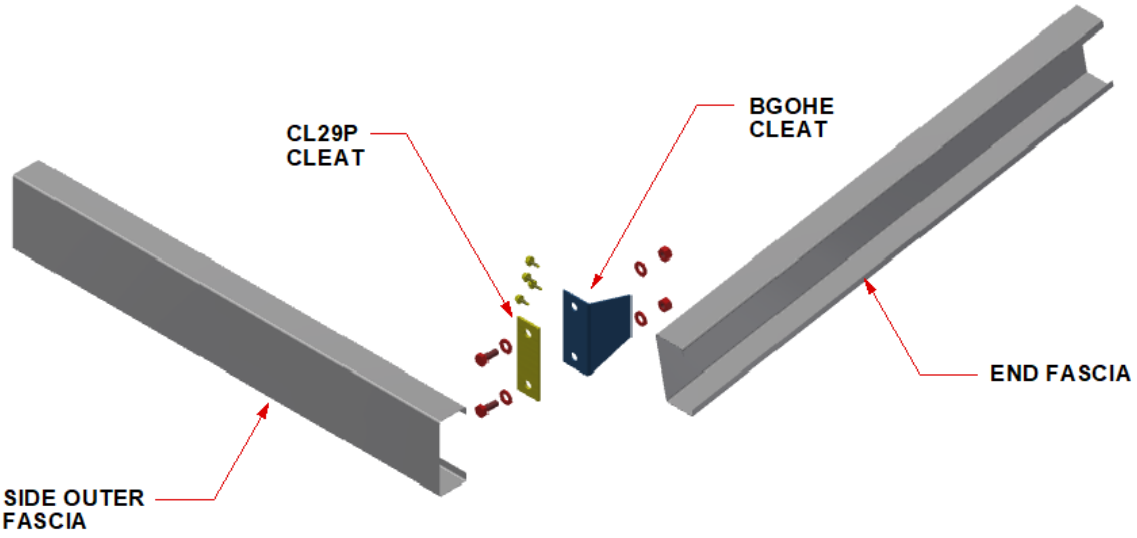

The Premier has the option for end frame overhangs.
The end frame overhangs are formed from C150 end fascia (unpunched sections) that are supported by the outer side fascia and end overhang nested struts. The end fascia will have a barge flashing that wraps the end fascia.
The end fascia (toes outwards) is connected to the outer side fascia with a clamp plate (CL29P) and cleat (BGOHE) with 2 @ HEX1 bolts to the lips of the outer side fascia. The cleat (BGOHE) is then tek fixed with 4 @ #14 teks (Tek7) to the web of the end fascia.

## Roof Cladding Closer




A closer cleat is provided to fix roof cladding between the lips of the C200 overhang struts.
The cleat is to be fixed to the lips of the top C200 overhang strut at the inner fascia location with 2 #14 teks (Tek7) to each lip. This closer cleat (BGOHC) will provide a location for roof sheet fixing.

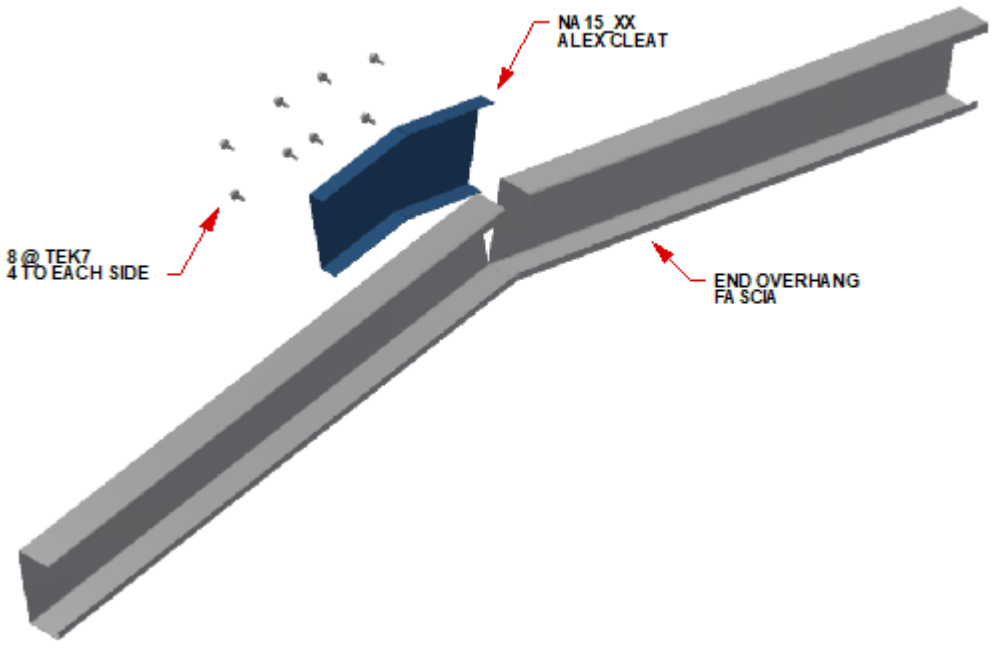
### Side / End Fascia Overhang Connection




The end overhang fascia is connected to the side outer fascia using the BGOHE cleat and a CL29P clamp plate. The clamp plate is positioned on the inside of the lips of the side outer fascia and clamped to the BGOHE cleat with 2 HEX1 bolts. The BGOHE cleat is teked to the back of the end fascia web with 4 @ #14 teks (Tek7).

**Note: On the Skillion Premier the upper end fascia connection is similar.**

### End Fascia Overhang Apex Connection

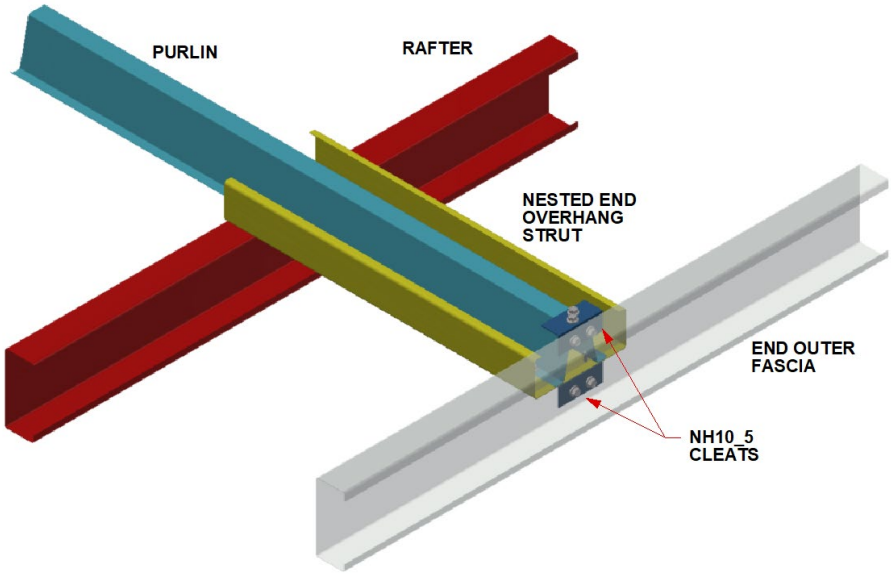



The apex of the end overhang fascia is connected using the NA15_XX cleat and 4 @ #14 teks (Tek7) to each C150 end fascia. (XX denotes the roof pitch angle).

**Note: This connection is only applicable to Gable Premier**

## End Fascia Overhang Strut Connection

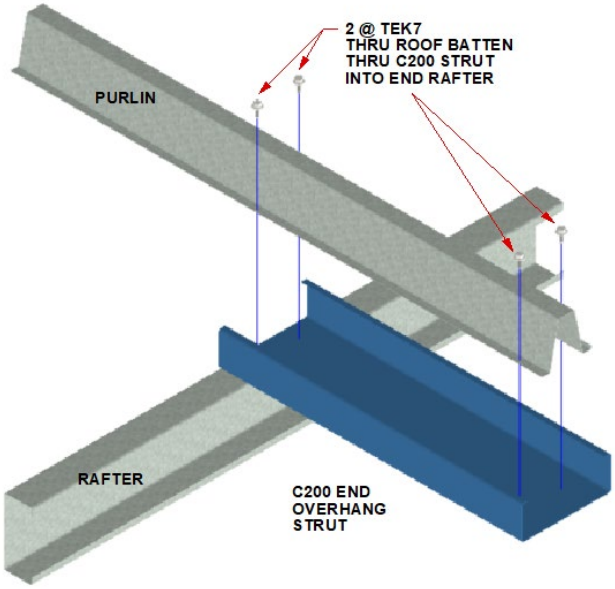
The end frame overhang consists of a nested C200 section with the roof batten.
The C200 is provided to enable end wall sheeting to be neatly scribed around.
This section details how to assemble the end overhang strut and end overhang fascia.




## End Overhang Strut Connection

The roof purlin/batten is supplied to reach to the desired end overhang fascia length. (300-800mm as per selected overhang).

Place the C200 end overhang strut to the web face of the end rafter. Align the purlin to the same end extent. This will be the same end alignment as the side overhang fascia's.
2 @ #14 tek screws (Tek20) are used to join the roof batten and the C200 end strut to the rafter top flange.
2 @ #14 tek screws (Tek7) are also used at the extent of the roof purlin to connect the outermost end of the purlin to the strut. Note that teks should be a minimum 50mm from the end of the strut.



## End Overhang outer Fascia Connection

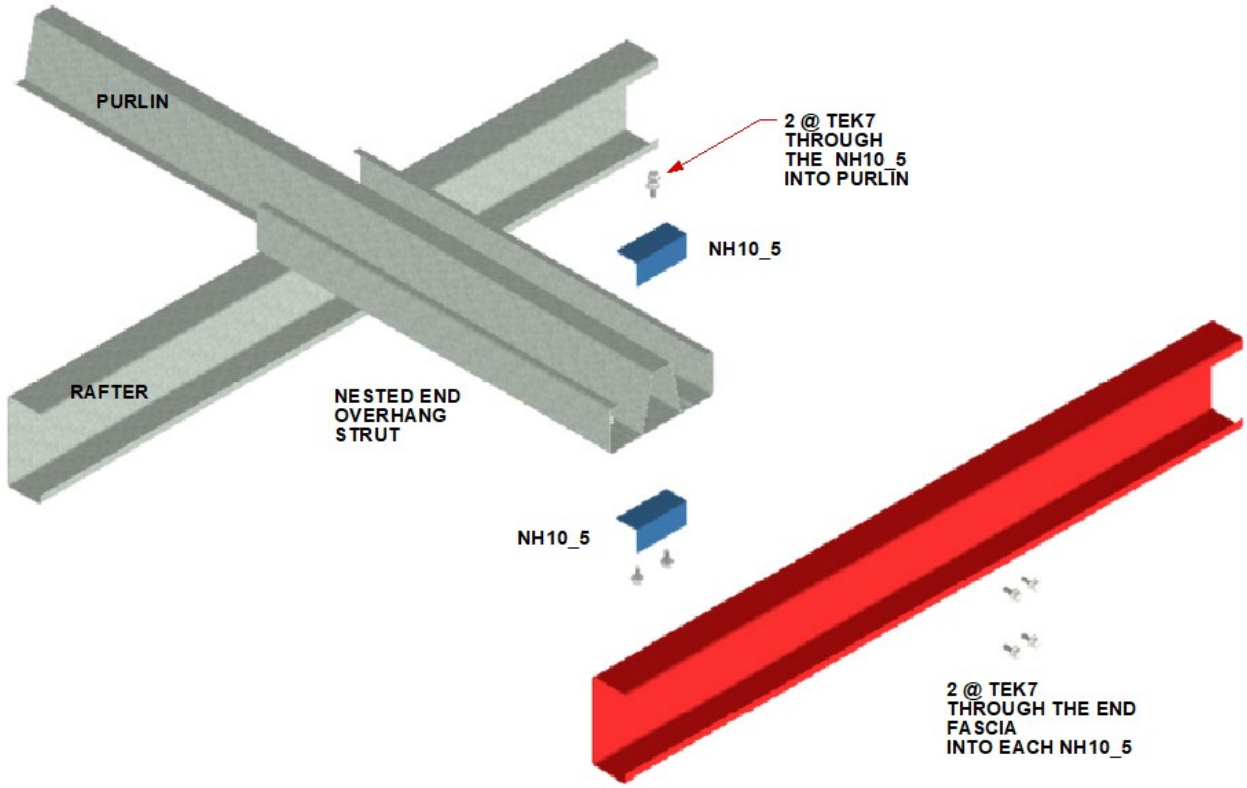
The outer end fascia is connected to the overhang strut as shown below.

2 @ NH10_5 cleats are supplied for each purlin location.

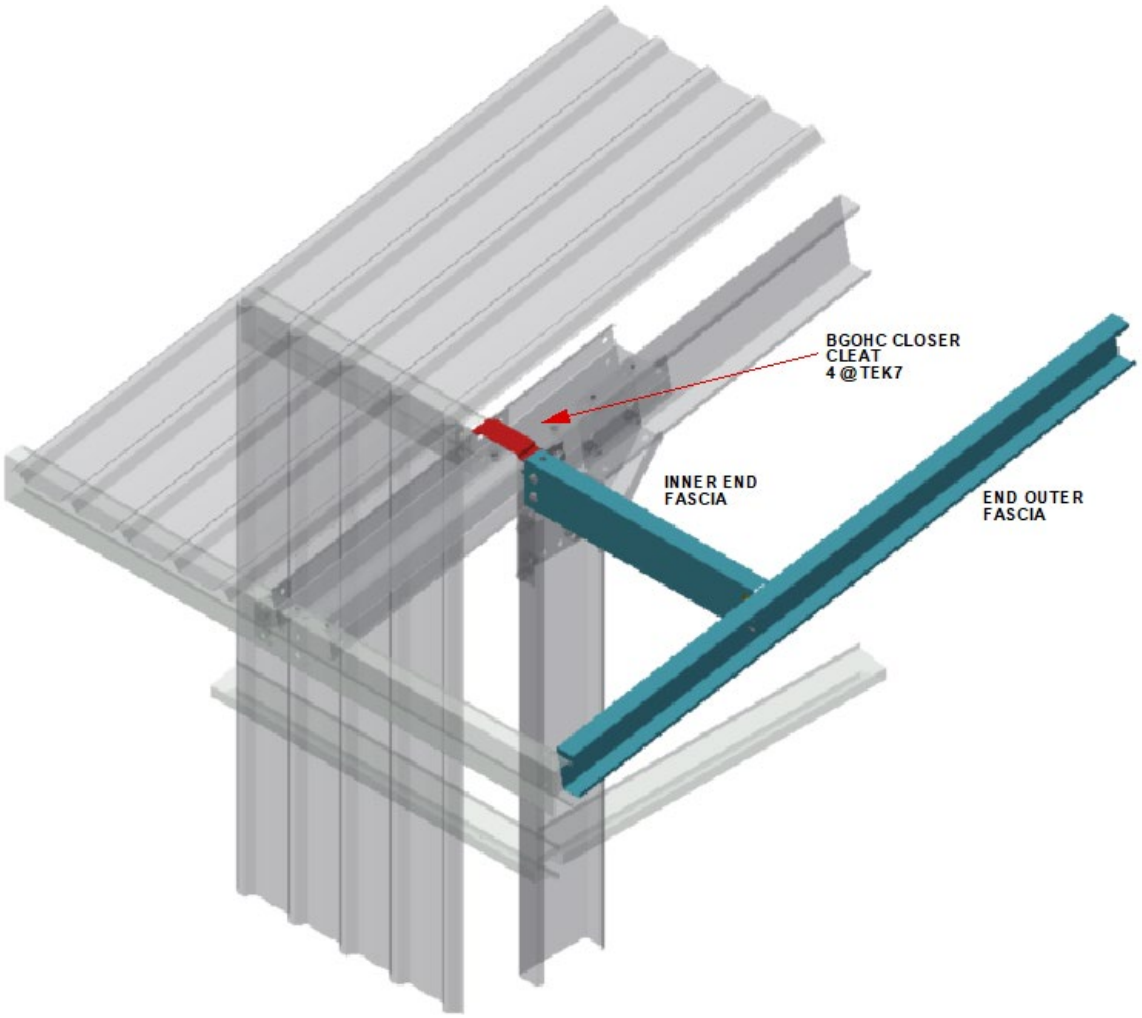
One NH10_5 cleat is teked to the top flange of the roof purlin using 2 @ #14 teks (Tek7).

One NH10_5 is teked to the underside of the C200 end overhang strut with 2 @ #14 teks (Tek7).

The end overhang fascia is then aligned with the top flange of the roof purlin and attached to the N10_5 cleats in the orientation shown below with the C150 end overhang facer with the web facing inwards. 2 @ #14 teks (Tek7) are applied through the web of the C150 to each NH10_5 cleat.



## Inner End Overhang Fascia



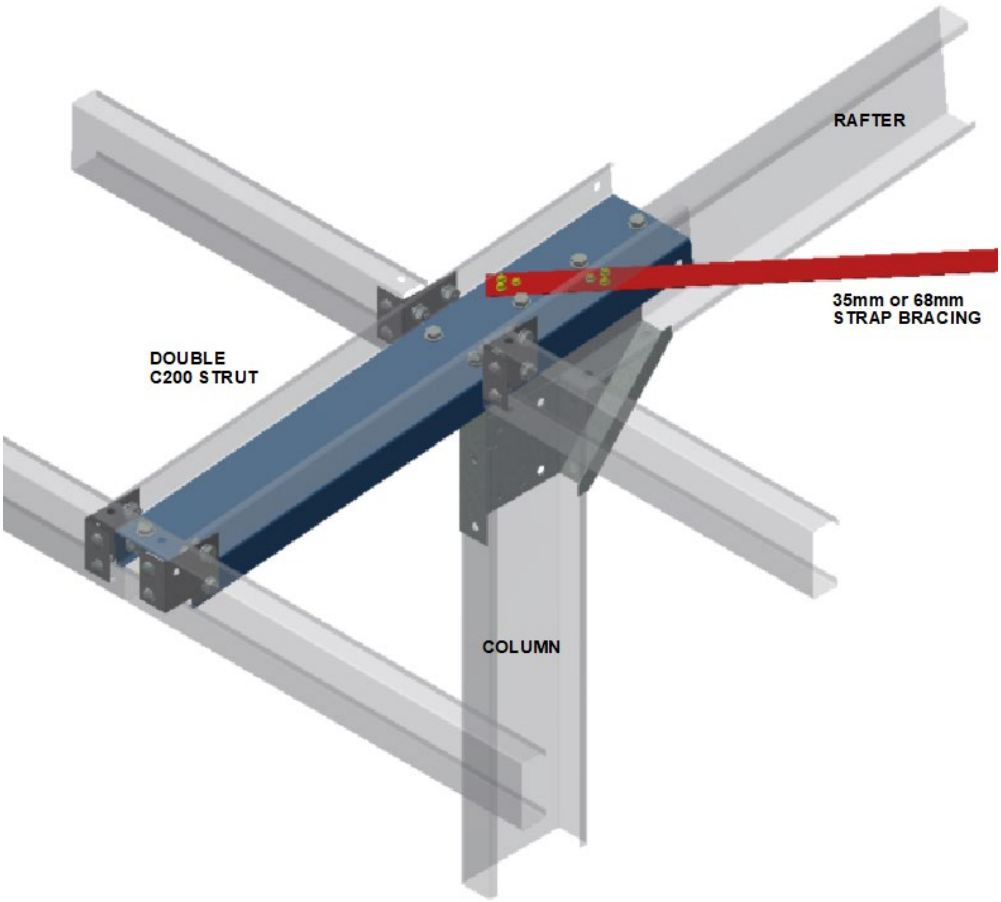

The inner end overhang or stub fascia is connected to the side overhang strut (2C200) with the standard fascia connection. (BGF_XX) see previous details.
The inner fascia is connected to the end fascia using a NH10/5 cleat with 3 #14 tek screws (Tek7) to both the inner end fascia and end fascia.

A BGOHC cleat is attached to the top toes of the side overhang (2C200) strut that provides a fixing point for roof sheeting tek screws. The BGOHC should be placed on every side overhang strut in line with the inner fascia. On the skillion Premier this is provided for both the lower and upper side inner fascia's.
The BGOHC is attached to the side overhang strut with 2 #14 teks to each lip (Tek7) (4 @ #14 teks total)

## Roof Bracing

Roof bracing will require special treatment at the side overhang location.
Depending on the size of the roof strap bracing the requirements for fitting may be different.

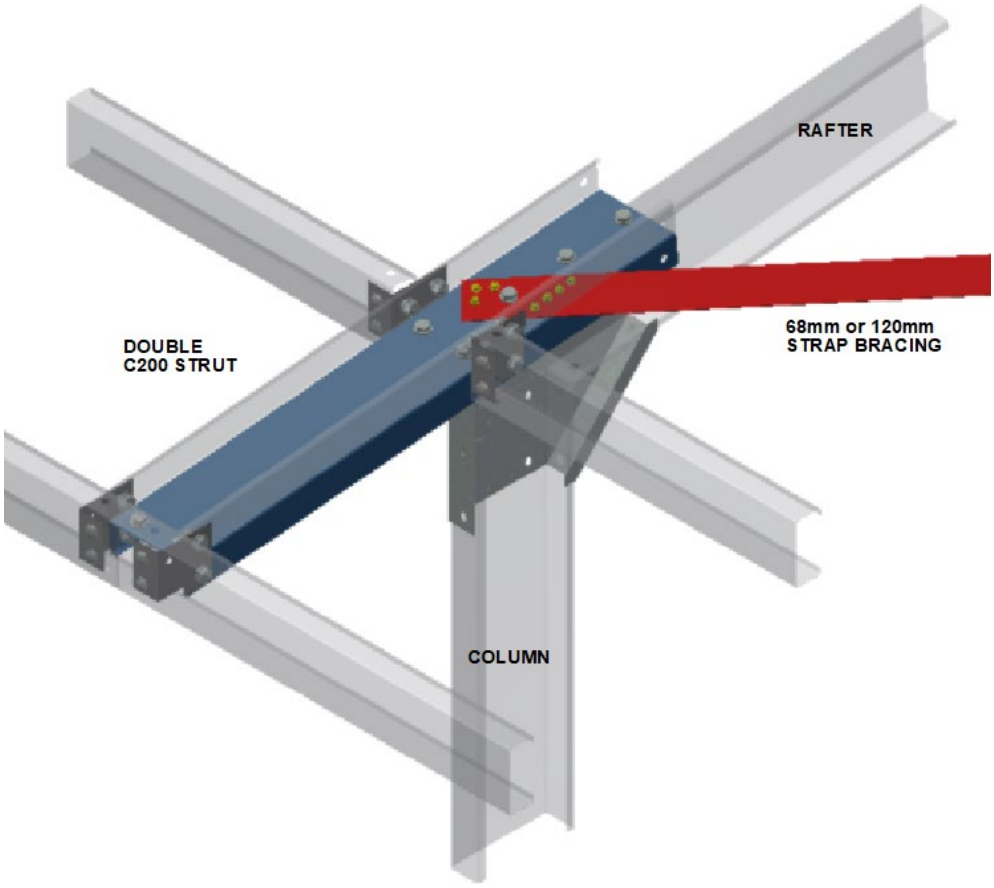
## 35mm and 68mm Roof Bracing




Roof bracing will be required to be fitted between the back to back C200 overhang strut.
This can be achieved by loosening the rafter top flange bolts that secure the overhang strut and slotting the bracing between the two sections. Note that other assembly bolts may also require loosening to enable the C200's to be parted slightly. Secure in place initially with one #14 tek screw (tek20) at overhang end. Fix all other locations of the bracing to roof purlins and other rafter locations before re tightening all overhang bolts. Finally apply all other tek screw to the end as per the quantity required for each bracing size. Tek counts are as per roof bracing rules in previous bracing section.

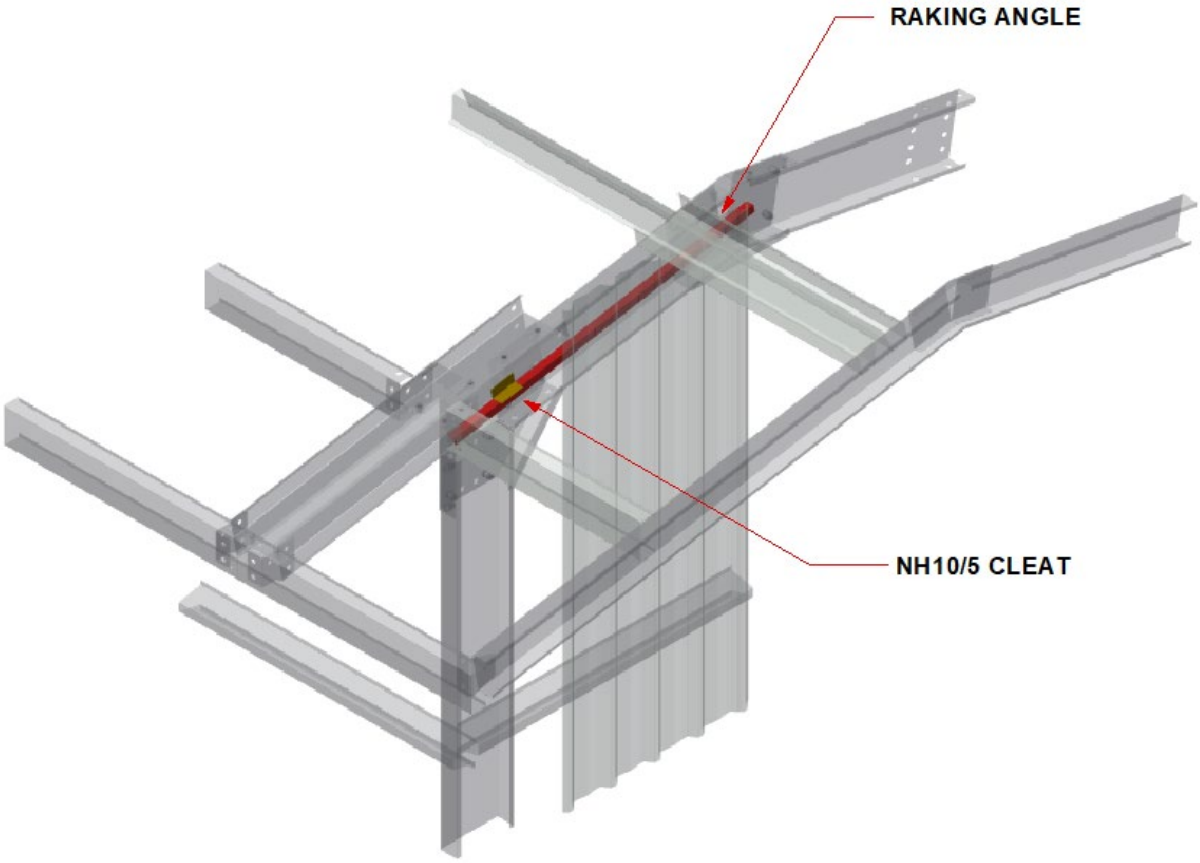
## 68mm and 120mm Roof Bracing

Roof bracing will require special treatment at the side overhang location.
Depending on the size of the roof strap bracing the requirements for fitting may be different.



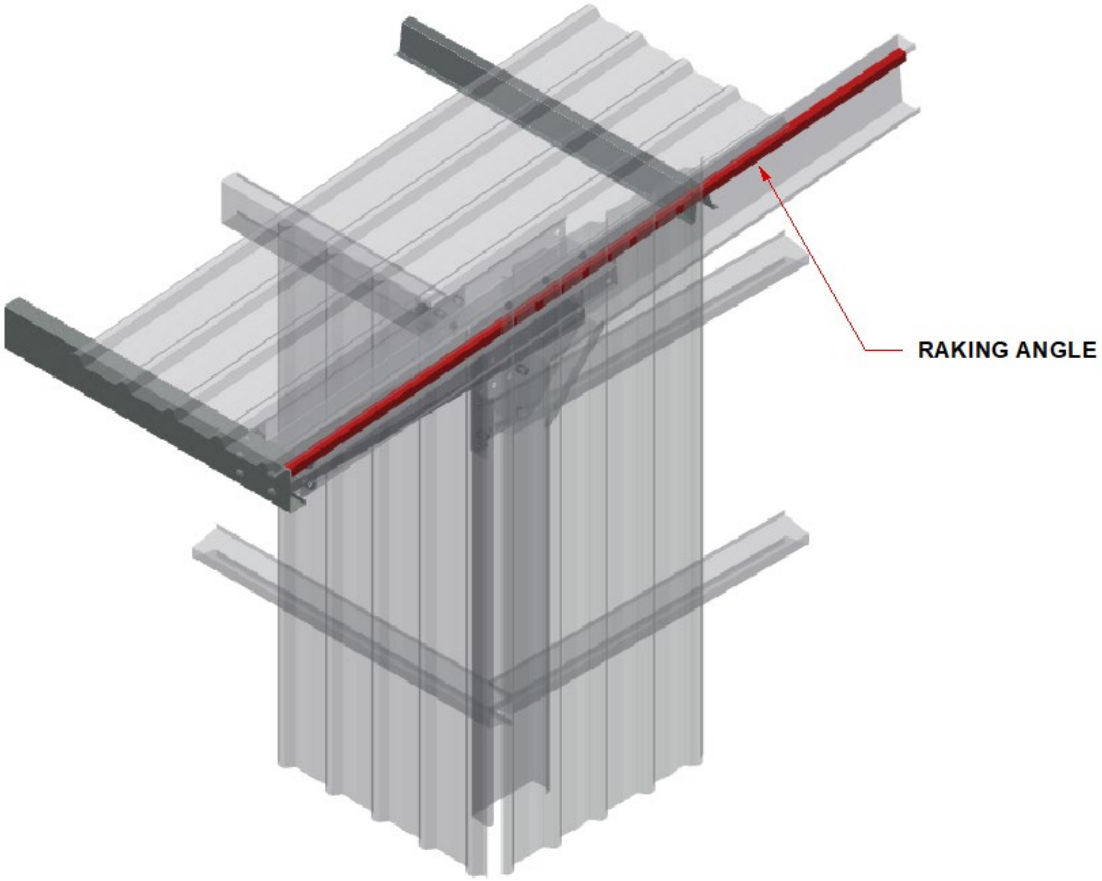

Roof bracing will be required to be fitted between the back to back C200 overhang strut.
This can be achieved by loosening the rafter top flange bolts that secure the overhang strut and slotting the bracing between the two sections. Note that other assembly bolts may also require loosening to enable the C200's to be parted slightly. Pre drill the end of the bracing strap 100mm from the end with a 20mm diameter hole. Fix all other locations of the bracing to roof purlins and other rafter locations before re tightening all overhang bolts. Finally apply all other tek screw to the end as per the quantity required for each bracing size. Tek counts are as per roof bracing rules in previous bracing section. Note that when using this method of roof bracing end fixing that the rafter bolt accounts for 3 end tek screws.

## Raking Angle at End Overhangs




Raking angles are provided to support the top edge of the end wall sheeting.
Raking angles will span from the inner side wall fascia to the apex on Gable Premier's.
Raking angle will span from the low eave inner side wall fascia to the upper eave inner side wall fascia on Skillion Premier's.
The raking angles are attached to the underside of each roof purlin with a #14 tek screw (Tek7).
The connection at the inner fascia can be connected at either the fascia web or to the side overhang strut. A NH10/5 cleat is provided to enable fixing. The NH10/5 cleat should be attached to the raking angle using 1 #14 tek and 2 #14 teks (Tek7) to either the fascia or side overhang strut.

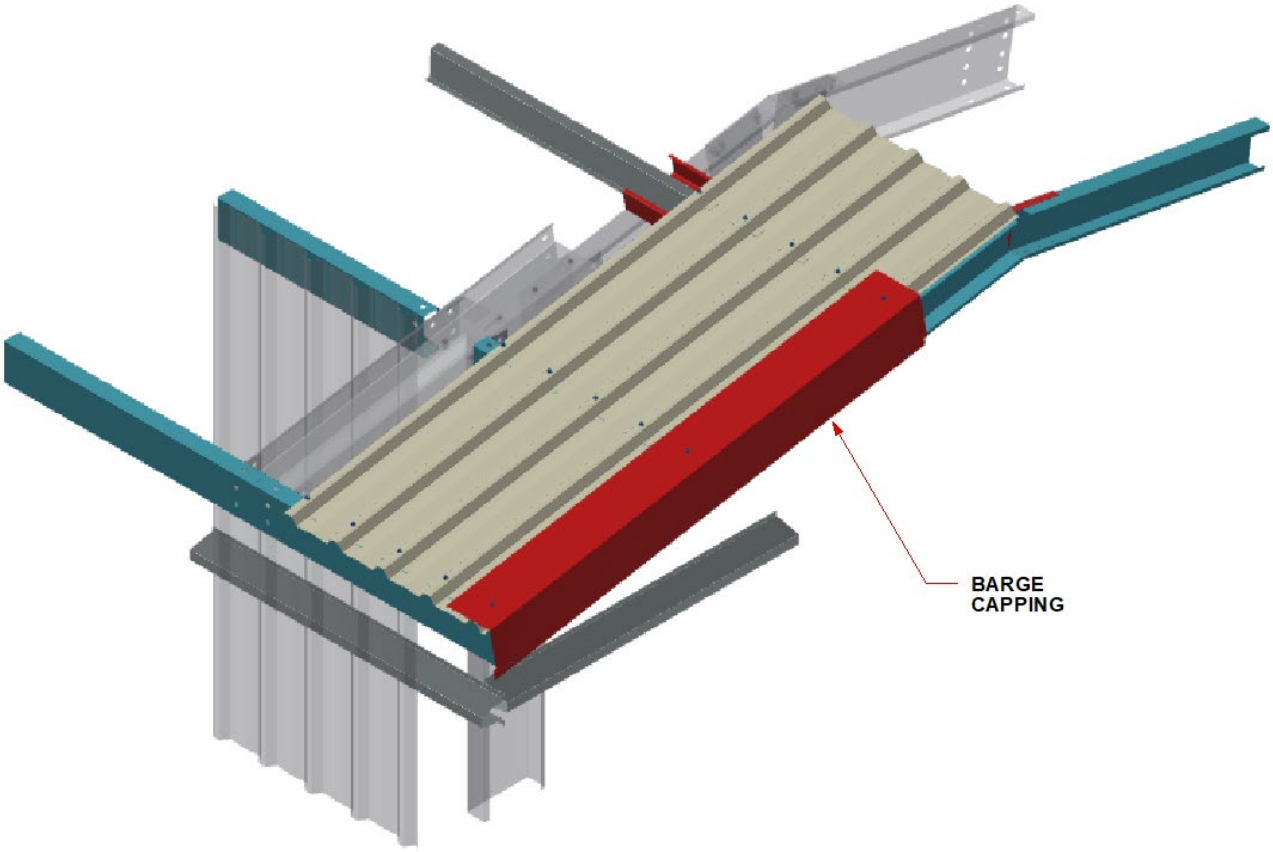
## Raking Angle at Non-End Overhangs




When there is no end overhang the raking angle will be fixed to the top of the roof battens with 1 #14 tek (Tek7). The raking angle will extend to the outer side fascia.

## Barge Capping

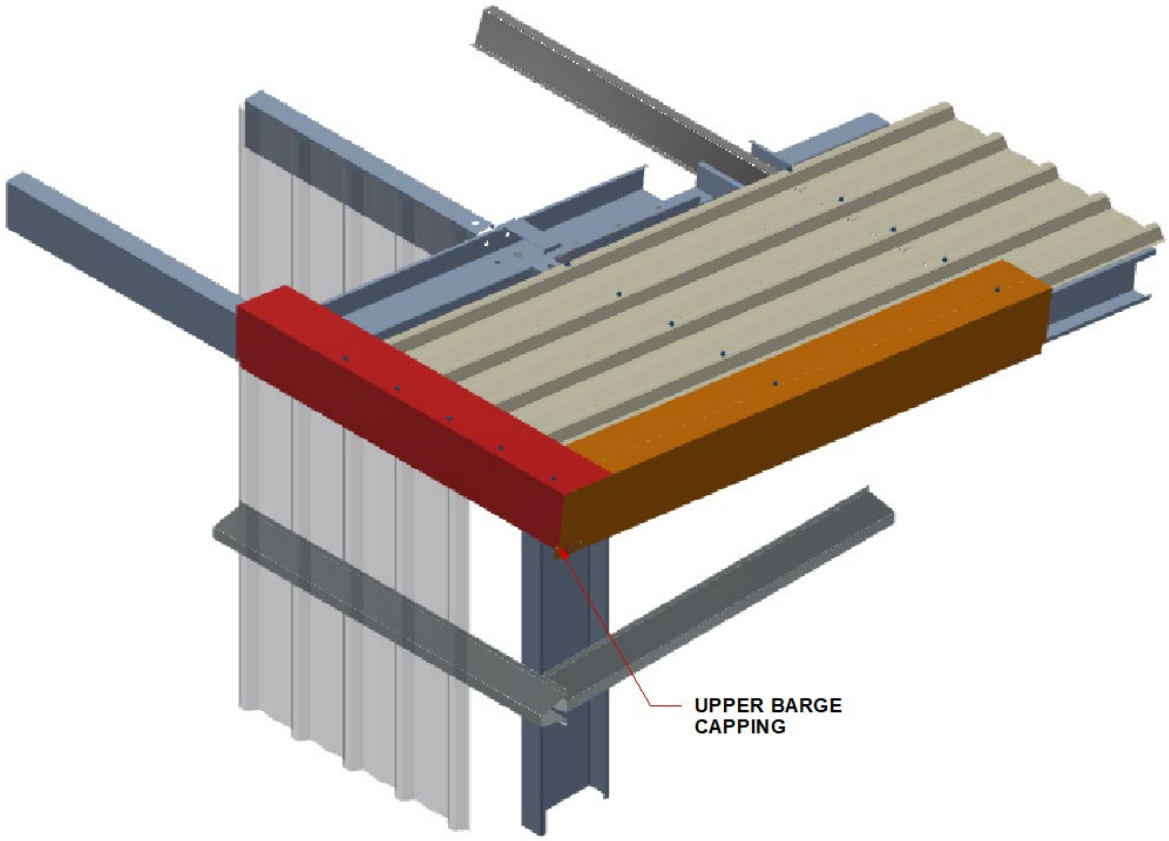
The barge capping sections give examples of attaching barges. For tek screw quantities refer to previous sections on flashings.
The barge capping sections give examples of attaching barges. For tek screw quantities refer to previous sections on flashings.




Barge capping's are designed to cover the end overhang fascia. The barge capping will extend from the apex to the outer eave on Premier Gables and from the upper fascia to the lower fascia on Premier Skillions. This will be to the extent of the roof sheeting. For Fixing of barge capping refer to the previous sections.

## Upper Barge Capping

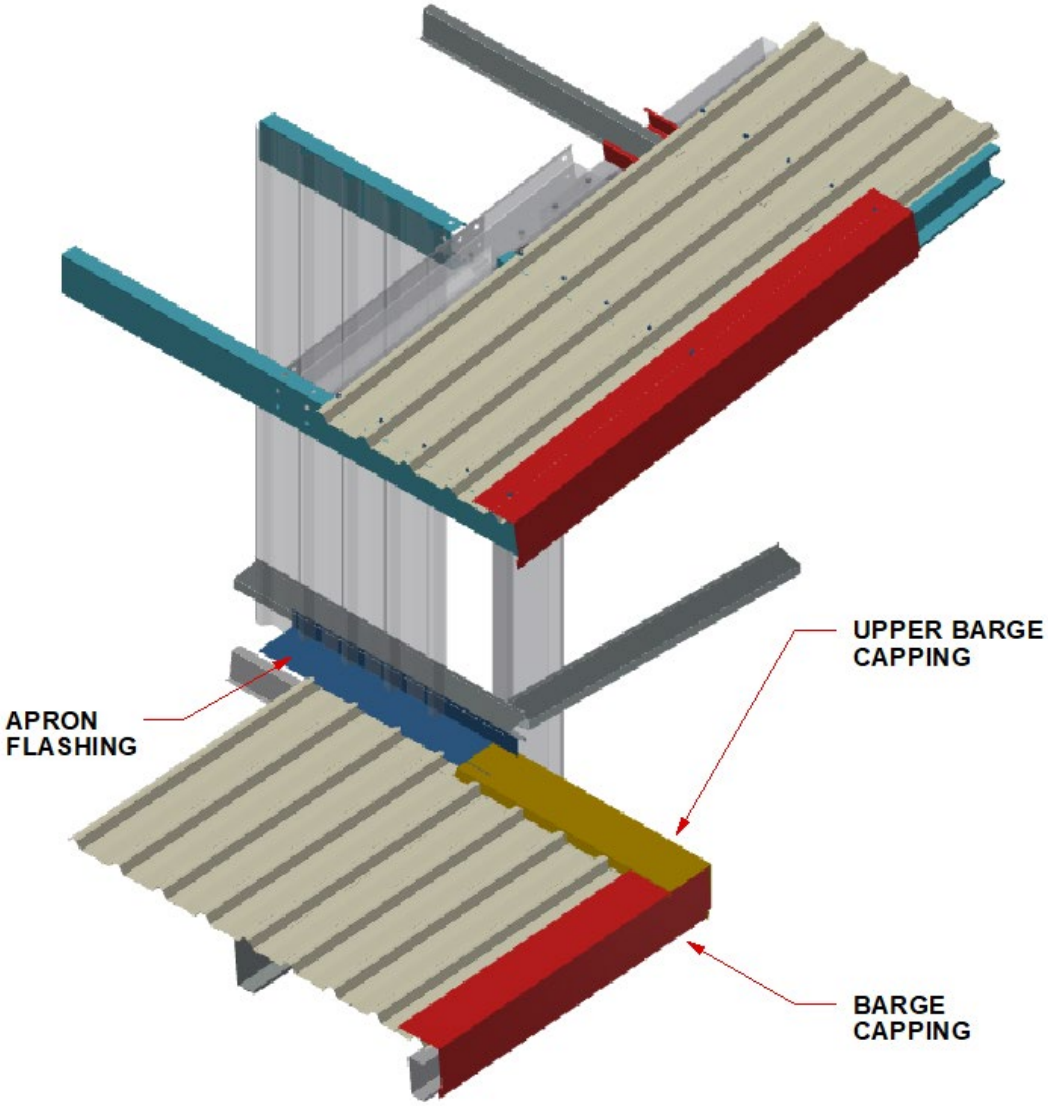
The barge capping sections give examples of attaching barges. For tek screw quantities refer to previous sections on flashings.




An Upper barge capping is provided to wrap the upper overhang outer fascia. Fixing is similar to previous section on the Skillion Premier upper barge capping.

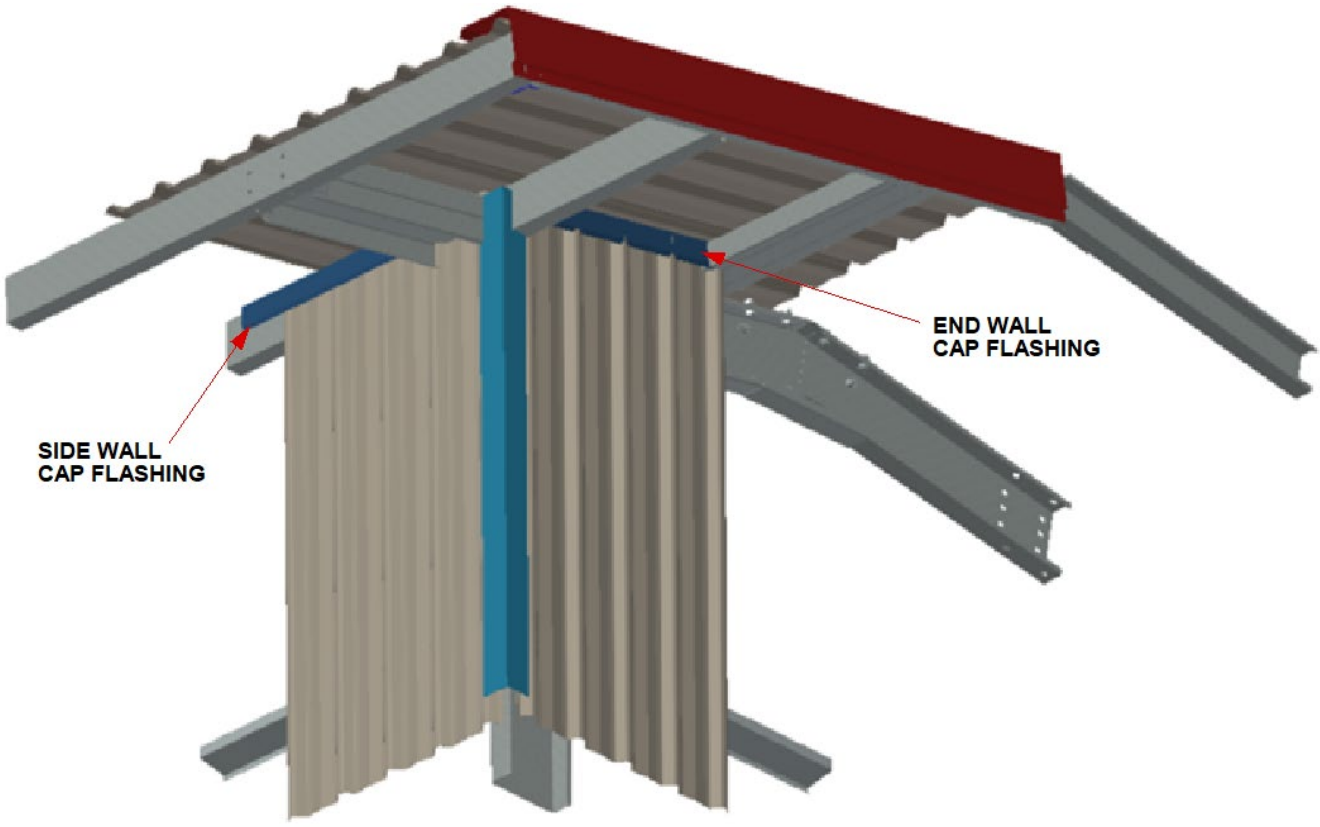
## Annexe Flashings & Capping

The barge capping sections give examples of attaching barges. For tek screw quantities refer to previous sections on flashings.



## Wall Cap Flashing

When an overhang exists a cap Flashing is supplied to be fitted to the top of all wall sheeting. Note that this flashing will be required to be trimmed between either end wall overhang struts or side wall overhang struts. For tek screw quantities refer to previous sections on flashings.



# Building Assembly Checklist

This assembly check list has been produced to assist the building kit Builder by providing progressive checks to assist in ensuring the building is assembled correctly and safely.

| | | | |
|---|---|---|---|
| ENDURANCE JOB NUMBER | ..... | QUOTE NUMBER | ..... |
| DEALER | ..... | DEALER REP | ..... |
| BUILDING TYPE | PREMIER TH96 | DATE OF COMPLETION | ..... |

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**Before the commencement of any works, it is essential that the Builder has read the assembly guide, has a copy of the assembly guide on site for reference, and has received from the Endurance Sheds & Structures Dealer a copy of all engineering and construction documentation relevant to this job only.**

**The Builder should be aware of all local and State Level Occupational Health and Safety requirements, Australian Standards for all primary and secondary accessories, and manufacturers' recommendations.**

**This Building Assembly Check List is relevant to the building only as it was ordered.**

This Building Assembly Check List is intended to provide general guidance only. Endurance does not accept any responsibility for any errors or omissions made by the Endurance Dealer or any third party Builder when advising on, assembling, or constructing any building constructed with Endurance products.
For the avoidance of doubt, this Building Assembly Checklist does not alter the duties and obligations of the Endurance Dealer in relation to the construction of Endurance products, as contained in the Accredited Dealer Agreement in place between Endurance and the Endurance Dealer.

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# PROGRESSIVE CHECKS

## BASE CONNECTION

***CHECK*** ***REQUIREMENT***

- ☐ All column hold-down bolts or cast in straps have been placed exactly as per Endurance documentation.
- ☐ All necessary components within this connection have been located and installed as per the supplied assembly guide.
- ☐ All hi-tensile bolting within this connection has been correctly tensioned to the values as nominated on the engineering documentation and tensioned as per the method as advised in the assembly guide.

## KNEE CONNECTION

***CHECK*** ***REQUIREMENT***

- ☐ All necessary components within this connection have been located and installed as per the supplied assembly guide.
- ☐ All hi-tensile bolting within this connection has been correctly tensioned to the values as nominated on the engineering documentation and tensioned as per the method as advised in the assembly guide.

## APEX CONNECTION (RAFTER TO RAFTER)

***CHECK*** ***REQUIREMENT***

- ☐ All necessary components within this connection have been located and installed as per the supplied assembly guide.
- ☐ All hi-tensile bolting within this connection has been correctly tensioned to the values as nominated on the engineering documentation and tensioned as per the method as advised in the assembly guide.
- ☐ If the building type requires the apex connection to be pre-set and raised to minimize framing member deflection, it has been done so, and to the values and methods as advised in the assembly guide.

## KNEE BRACE TO COLUMN RAFTER (IF APPLICABLE)

***CHECK*** ***REQUIREMENT***

- ☐ The knee brace connection cleats have been correctly located on the framing members, as indicated on Endurance's documentation.
- ☐ All necessary components within this connection have been located and installed as per the supplied assembly guide.
- ☐ All hi-tensile bolting within this connection has been correctly tensioned to the values as nominated on the engineering documentation and tensioned as per the method as advised in the assembly guide.
- ☐ On garages, zed purlin knee braces if applicable are fixed to column and rafter with the nominated number of #14 tek screws.

## BACK TO BACK MEMBER FIXING (IF APPLICABLE)

***CHECK*** ***REQUIREMENT***

- ☐ Rolled sections are fixed back to back at spacing's not exceeding 1300mm for back to back column or rafters, or 1200mm for knee braces or rafter ties.
- ☐ For columns that do not have wall cladding fixed and are classified as open, columns must be fixed with a minimum of 2-M12 x 30 Grade 4.6 bolts at designated web punching's.

## MEMBER STIFFENING AND LOCATING

***CHECK*** ***REQUIREMENT***

- ☐ For back to back framing members, web stiffeners have been installed with accurately any placed pre-drilled holes for any purlins or girt within the extent of the stiffener, and in accordance with and as advised in the assembly guide.
- ☐ Web stiffener friction plate angles have been installed on opposite web of web stiffener, with M16 x 50 hi-tensile bolts at the column or rafter connection.
- ☐ All necessary components within this connection have been located and installed as per the supplied assembly guide.
- ☐ Any flange stiffening to un-restrained columns are securely fastened to column flanges at centres not exceeding engineer's requirements, and in accordance with the assembly guide.

## ROOF AND WALL BRACING

***CHECK*** ***REQUIREMENT***

- ☐ All bracing is located within the building as specified on Steelwork Marking Plan or as specified on any engineering drawing or engineering notes.
- ☐ Any construction bracing supplied by Endurance is used in locations as designated.
- ☐ All strap bracing is located between the inside of the cladding, and the external surface of the fixing member.
- ☐ Strap bracing U-Bolt tensioner, if supplied, correctly installed.
- ☐ Strap bracing installed with the nominated amount of fasteners at each strap end, and to fixing members.
- ☐ If site cut lateral braces were supplied, the cuts must be neat and clean, allowing a snug fit to within 5mm of the framing member.
- ☐ The designated numbers of tek screws were fixed to both ends of each lateral brace.

## ROOF AND WALL BRIDGING (IF APPLICABLE)

***CHECK*** ***REQUIREMENT***

- ☐ The number of rows of bridging per bay as designated on the engineering documentation has been installed.
- ☐ Roof bridging is to extend from the fascia channel on one side wall to the fascia channel on the other side wall and must be bridge continuously under the apex. All fixing is to be in accordance with the assembly guide.
- ☐ Side wall bridging is to extend from the fascia channel to the floor. All fixing is to be in accordance with the assembly guide.
- ☐ End wall bridging is to extend from the end frame rafter to the floor. All fixing is to be in accordance with the assembly guide.

## CLADDING FIXING

***CHECK*** ***REQUIREMENT***

- ☐ Roof cladding is fixed with the specified number and type of crest fixing tek screws at all fixing locations to suit the roof cladding profile.
- ☐ Roof cladding has necessary pan turn up under the ridge capping.
- ☐ Fiberglass sheeting is located with at least one full length metal sheet between fiberglass sheets, and not located adjacent to any end frame.
- ☐ Wall cladding is fixed with the specified number and type of pan fixing tek screws at all fixing locations to suit the wall cladding profile.
- ☐ All cladding and flashing fixing is in accordance with the assembly guide.

## CONSTRUCTION - GENERAL

***CHECK*** ***REQUIREMENT***

- ☐ Adequate stabilizing measures were in place during construction.
- ☐ No part was over-stressed during the construction process.

## SLIDING DOORS

***CHECK*** ***REQUIREMENT***

- ☐ The appropriate amounts of door rails were installed to suit the sliding door stile punching.
- ☐ The appropriate amounts of track support brackets were installed to suit the inner and outer fascia purlin punching.

## ACCESSORY PLACEMENT

***CHECK*** ***REQUIREMENT***

- ☐ Accessories such as access doors and windows must be located as per the Floor Plan and Elevation generated in RDS and was installed in accordance with the assembly guide.

## MAINTENANCE TO NON-FIELDERS MANUFACTURED PRODUCTS

***CHECK*** ***REQUIREMENT***

- ☐ Maintenance to any product not manufactured by BlueScope Fielders is as per the supplier's published recommendations.

## DISMANTLING AND ALTERATIONS

***CHECK*** ***REQUIREMENT***

- ☐ Any dismantling and/or alterations to the building, and particularly, the re-use of pre-loaded & pre-tensioned components, will require certification of engineering integrity by another engineer, and liability will need to be accepted by that engineer.

……
(Builder, dated)

# Maintenance Notes

**Your shed may need some additional care to ensure long life and keep it looking at its best. Below are some guidelines in regard to maintenance for your building.**

**Regular washing with water will not only enhance cladding life, but it will also maintain its attractiveness for longer periods. Applications where the paint finish is automatically washed by rainwater do not usually require this maintenance, e.g. roof cladding. Areas requiring regular cleaning include wall cladding under eaves, garage doors and the underside of eave gutters.**

**Areas not regularly washed by rainwater should be hosed down at least every six months and more frequently in coastal areas where marine salt spray is prevalent, and in areas where high levels of industrial fallout occur. In cases where the regular maintenance referred to above does not remove all dirt that may have adhered to the surface of the paint, the following procedure should be carried out:**

**Wash the surface with a mild solution of pure soap or mild non-abrasive kitchen detergent in warm water. Application should be with a sponge, soft cloth, or soft bristle nylon brush, and should be gentle to prevent shiny spots. The cladding should be thoroughly rinsed with clean water immediately after cleaning to remove traces of detergent.**

**Never use abrasive or solvent type cleaners (turpentine, petrol, kerosene, paint thinners) on COLORBOND® steel and ZINCALUME® steel. If cared for in accordance with these instructions, your building components will give many years of low maintenance life.**

**ZINCALUME® steel (and COLORBOND® steel manufactured with a ZINCALUME® steel substrate), are NOT recommended for immersion in or contact with wet cement. Rapid corrosion and degradation of the coating alloy will occur.**

**The placing of garden soil directly against steel cladding is strongly discouraged as corrosion of the sheeting will rapidly occur about the area covered with soil. Similarly, contact with corrosive materials such as fertiliser, mulch, salt, steam, heavy condensation, coal tar, urine, and chlorine, etc., should be avoided.**

**Moisture or moisture retaining materials should not be permitted to remain in intimate contact with ZINCALUME® steel, COLORBOND® steel or galvanized steel. Such contact will ultimately result in corrosion of the material.**

**The major factors influencing corrosion are the continual retention of moisture and the differential concentration of oxygen at the material surface. Gutters are frequent victims, with insufficient fall leading to ponding of water. The accumulation of debris (leaf matter, dirt etc.) that results in continual immersion is the most common reason for unsatisfactory performance of guttering.**

**Structural framing components and fasteners exposed to the weather or any of the above should be regularly coated with an anti-corrosive coating. Note that new zinc coated and galvanised components may need etching before coating.**

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