UltraSpan

CONNECTION GUIDE

TIMBER FRAMES

GENERAL INFORMATION

SECTION 1: *HARDWARE/FASTENERS CONNECTIONS*

SECTION 2: *SYSTEM CONNECTIONS*

SECTION 3: *FRAMING CONNECTIONS*

SECTION 4: *SUBFLOOR CONNECTIONS*

SECTION 5: *FLOOR REMIDY*

G. GENERAL

G1. All dimensions are in millimetres, do not scale, contact UltraSpan Pty Ltd office with queries. Ensure joists and bearers are installed in the correct locations as per dimensions on plans. Ensure joists are installed in the correct orientation as noted on plans. Joist dimensions are from the outside of external walls to centre of joists. Do not cut or move joists for services, contact UltraSpan Pty Ltd office.

D. DISCLAIMER

D1. D1. It is the customer's responsibility to ensure the design is accurate and per the building plans and that the final design meets local building code/engineering and relevant statutory requirements. UltraSpan Pty Ltd makes no representations or warranties of any kind, express or implied, nor accepts any liability whatsoever about the completeness, accuracy, reliability, suitability, compliance, or lawfulness of any design work done on a customer's behalf. In no event will UltraSpan Pty Ltd be liable for any loss or damage, including indirect or consequential loss or damage, without limitation.

SF. SAFTEY

SF1. In all stages of the installation process, it is the responsibility of the builder to make sure that the safety of the work is achieved and that the safety requirements are not part of the engineering design.

SF2. Flying and falling building debris is a serious hazard to life and property.

SF3. All construction practitioners should be aware of the need to prevent any part of the building envelope from becoming detached and to secure unfixed and waste materials during the construction process.

SF4. Fabricators and installers should adopt safe work practices and comply with relevant regulations.

SF5. All electrically conductive sections of steel structural frames should be earthed in accordance with the requirements of the local electricity authority. As soon as the frame erection process is practical, a temporary earth should be established until the permanent earth is installed.

SF6. When metallic-coated steel components are cut on-site, tools and processes that shear the material are preferred over those that use heat and/or abrasion.

SF7. Ensure the cutting is done carelessly so thin materials are well protected at cut edges. Where materials are thicker than about 1.2 mm, cutting requires more care and ensure cut areas have spray galvanizing.

SF8. Wherever possible, hazards should be eliminated in the construction process.

TS. TRANSPORT & STORAGE:

TS1. To prevent excessive loads on elements during transportation, temporary blocking pieces may be placed inside joist to prevent stacked plate damage, and recommended slinging points may be marked on Joist packs.

TS2. Steel joist lifting, loading, and transportation shall be accomplished with sufficient care to prevent damage.

TS3. When a crane is used to unload, suitable lifting methods are required to minimize racking loads or local distortion of members.

TS4. Where cranage is required, sling Joists from the top points.

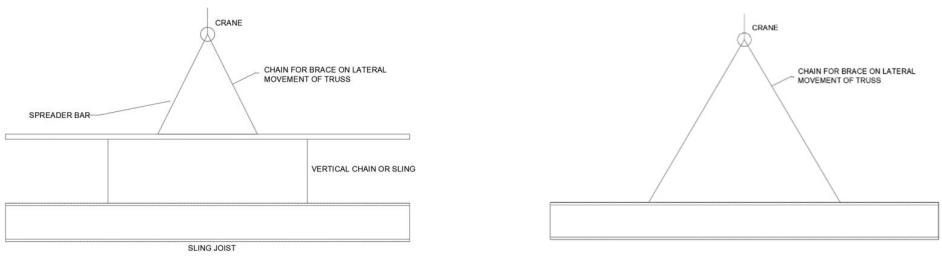
TS5. Slings should be located at equal distances from the joist centreline and be approximately one-third to one-half the length apart.

TS6. The angle between sling legs should be 60 degrees or less, and a spreader bar or strongback should be used where joist spans are greater than 9.0m

TS7. During transport and storage, metallic-coated steels may be exposed to short or long periods of contact with moisture or corrosive reagents. Provided any corrosive substances are promptly removed, short periods of exposure present little difficulty. However, supply practices and site arrangements should avoid prolonged contact of metallic-coated steel with moisture sources, especially if they are contaminated with the salty, organic, or industrial matter.

TS8. Acids and solvents used on building sites may be corrosive to metallic-coated steel components.

TS9. Joists are to be stored away from dust, sand, soil, debris etc. All of these can affect the serviceability of the structures. They are to be checked before installation.

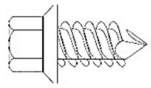
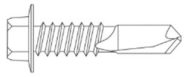
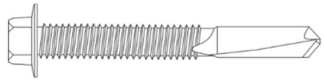
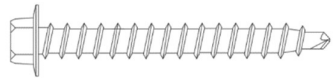
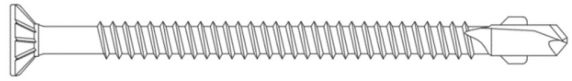


SECTION 1:

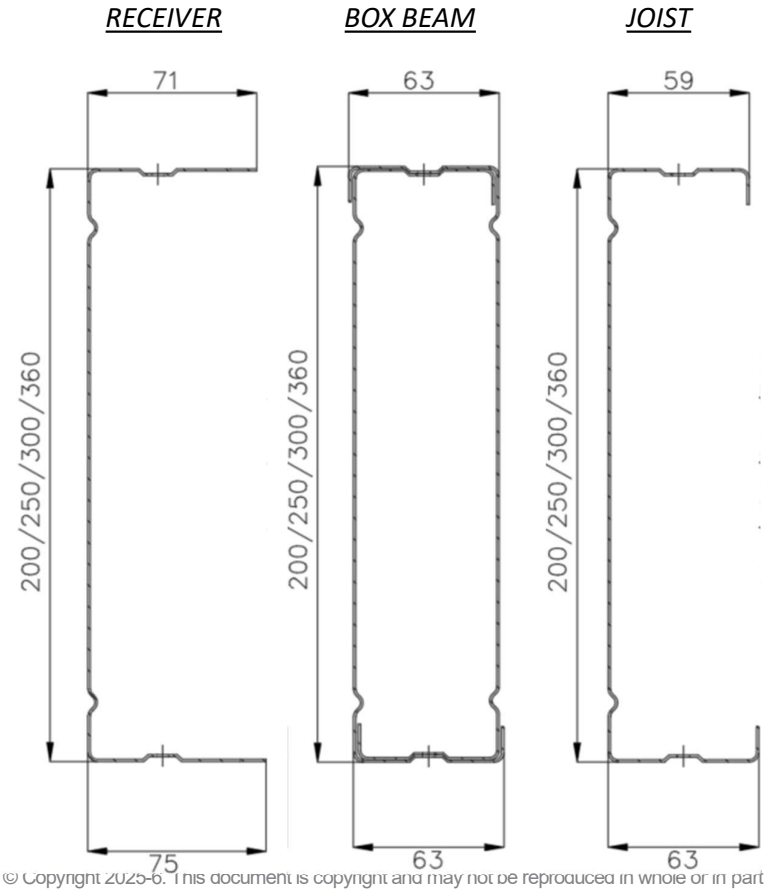
HARDWARE/FASTENERS CONNECTIONS

COMPONENTS

CONNECTION COMPONENTS

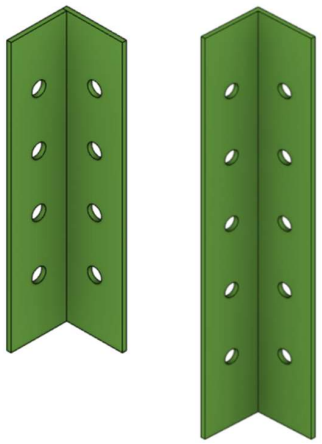
Type	Description	Application
	M8 - 1.25x17mm TEK Hex Head C3	Receiver tab to joist
	12 - 14x20mm TEK Hex Head C3	Receiver to box beam Receiver to steel wall
	12 - 24x38mm Series500 TEK Hex Head C3	Receiver to steel beam
	12 - 11x40mm Batten TEK Hex Head C3	Receiver to timber beam or wall Steel bottom plate to receiver
	12 - 16x70mm Wingtip Philips C3	Timber bottom plate to receiver

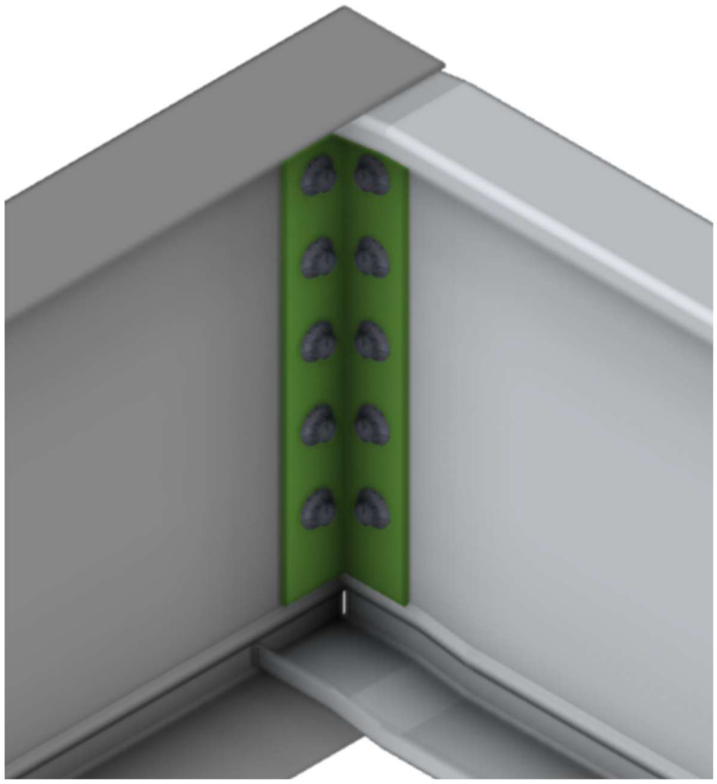
SYSTEM PROFILES



CONNECTION BRACKETS

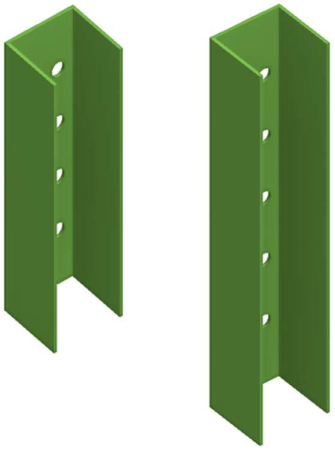
CORNER BRACKETS

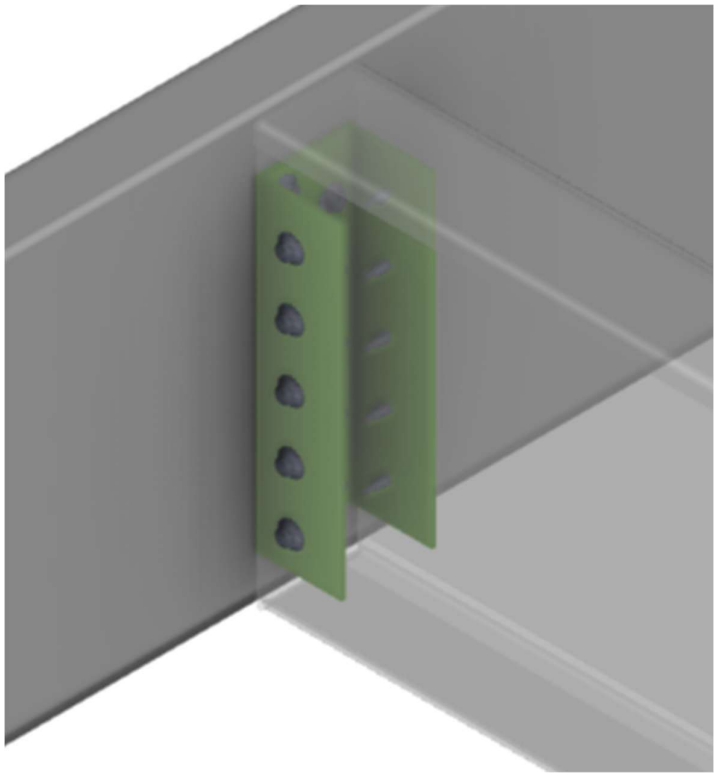




ECB190	ECB290
Dimensions: 190x50x50x2.4mm	Dimensions: 290x50x50x2.4mm
Joist size: 200-250	Joist size: 300-360

BOX BEAM BRACKETS





TB190	TB290
Dimensions: 190x60x50x2.4mm	Dimensions: 290x60x50x2.4mm
Box Beam size: 200-250	Box Beam size: 300-360

SECTION 2:

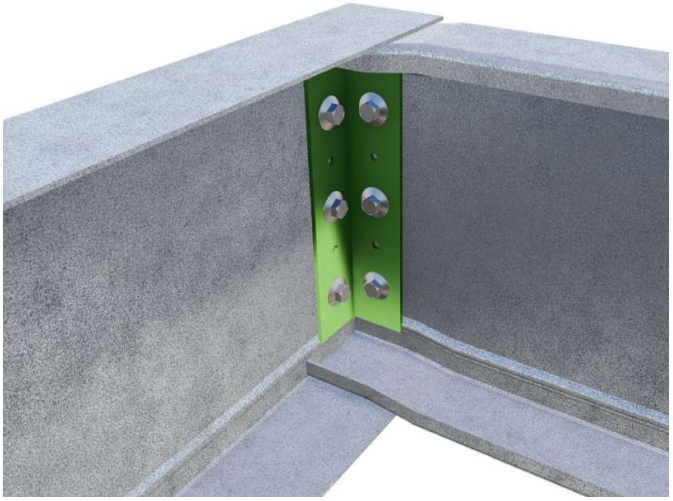
SYSTEM CONNECTIONS

RECEIVER CONNECTIONS

TABS

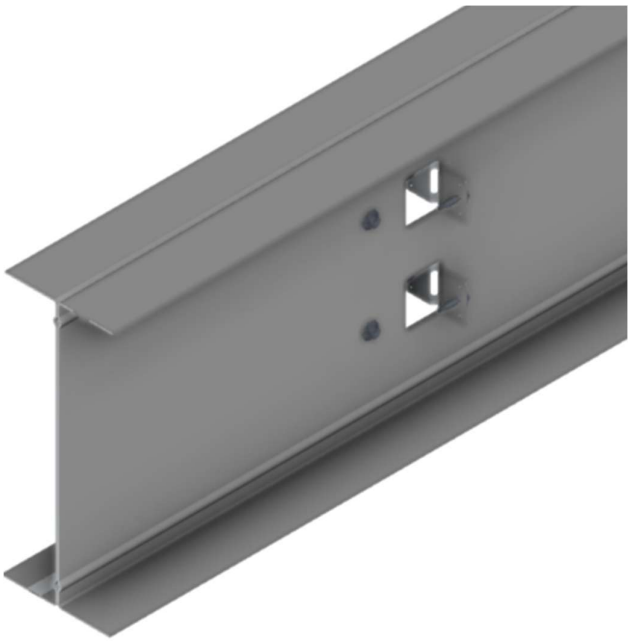
PER TAB
Option 1: 1 x M8-17 TEK
Option 2: 2 x 12-20 TEK

CORNERS AND/OR REMEDIAL WORK



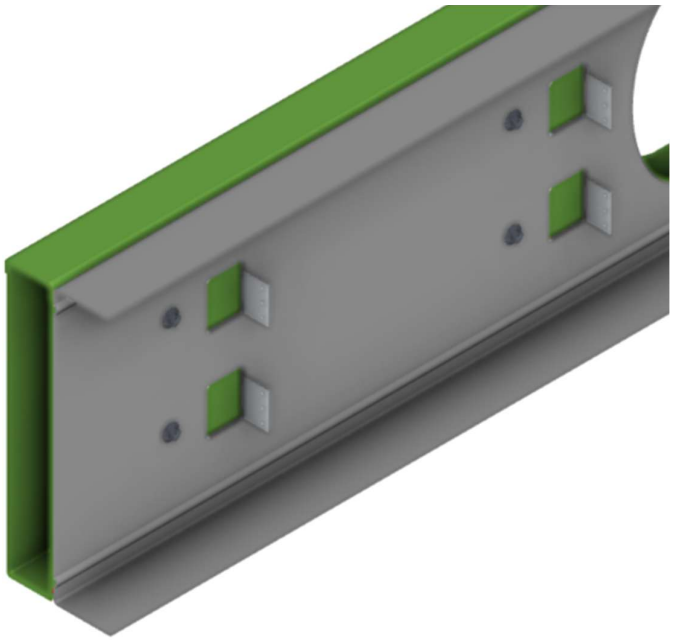
PER SIDE
Option 1: 3 x M8-17 TEK
Option 2: 4 x 12-20 TEK

B2B (BACK TO BACK)



PER TAB LOCATION
2 x 12-20 TEK

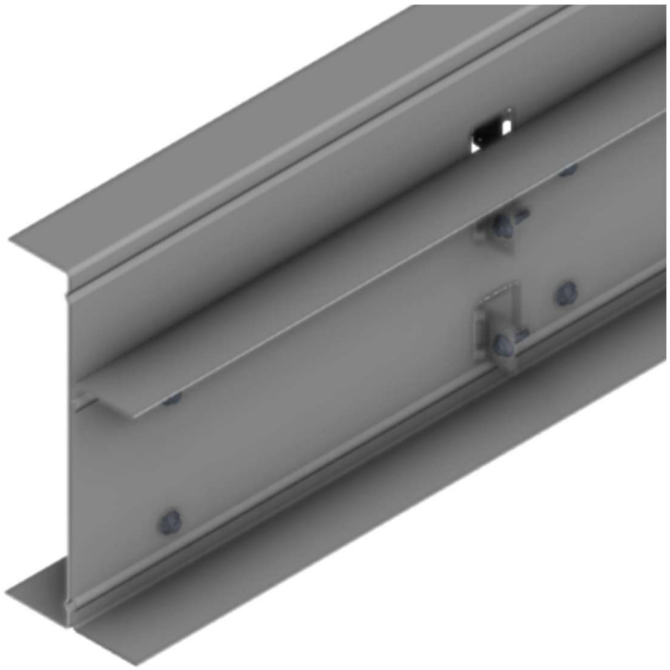
BOX BEAM CONNECTION



PER TAB LOCATION
Option 1: 2 x M8-17 TEK
Option 2: 2 x 12-20 TEK

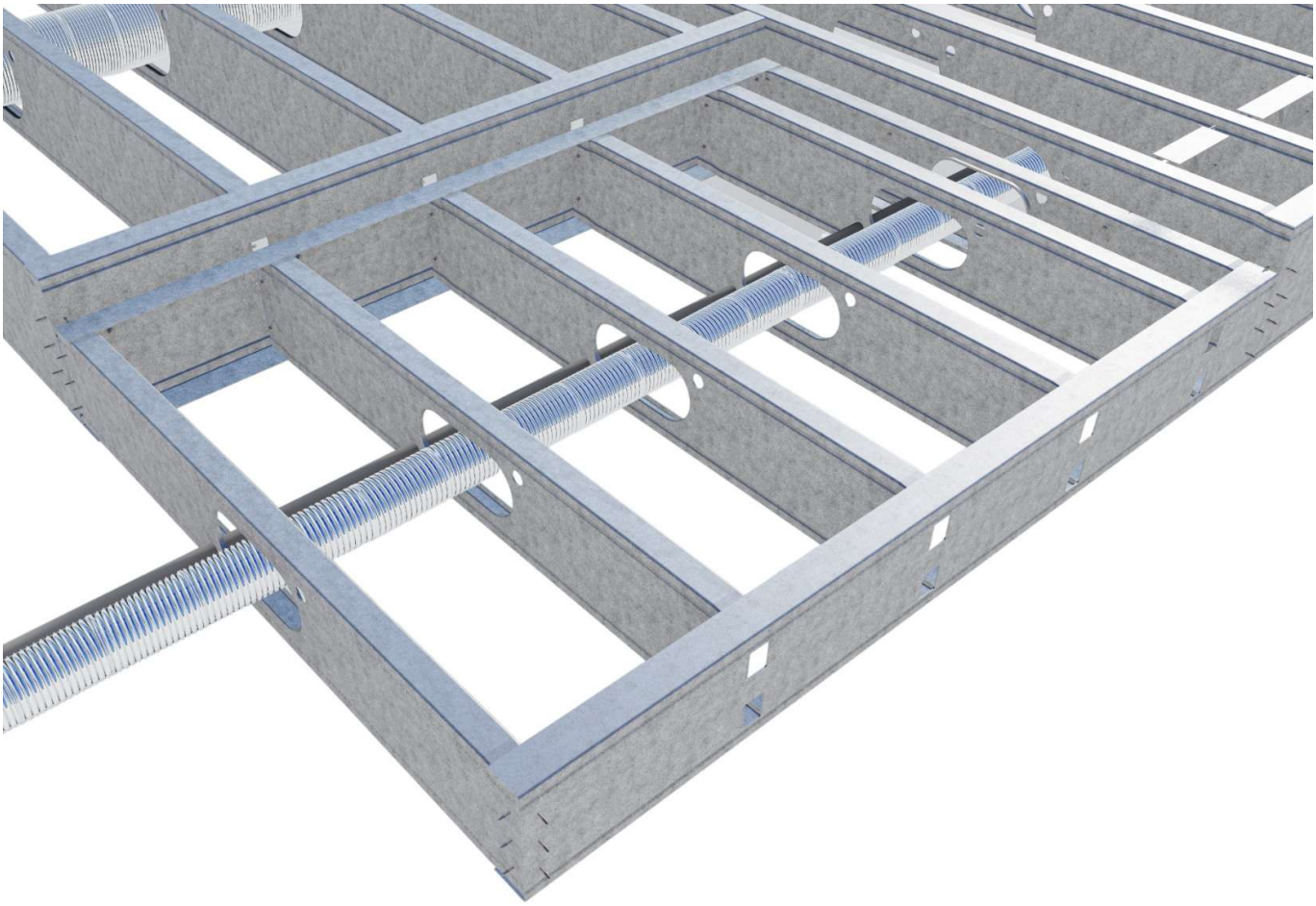
RECEIVER CONNECTIONS

STEP DOWN CONNECTION (min.50mm)



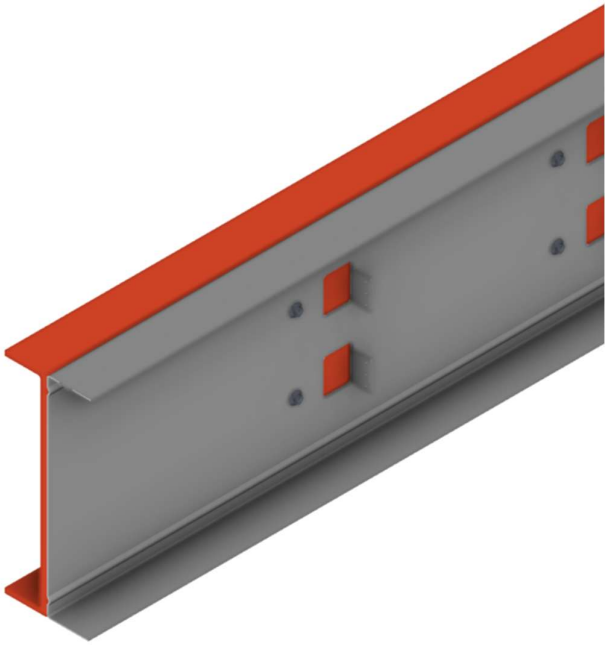
PER TAB LOCATION
2 x 12-20 TEK

STEP DOWN VIEW



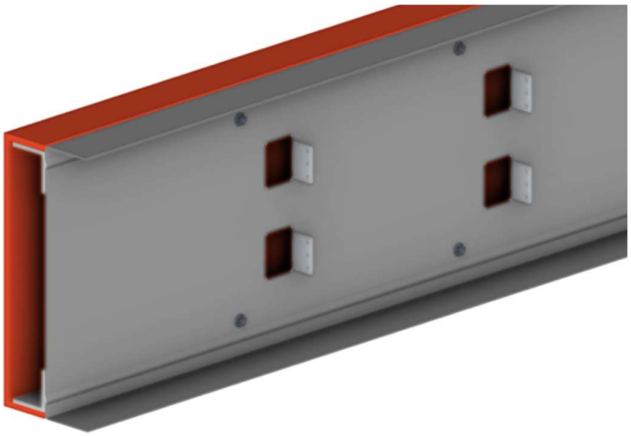
RECEIVER CONNECTIONS

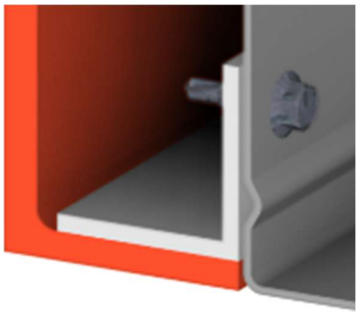
STRUCTURAL STEEL (FACE)



PER TAB LOCATION
2 x 12 - 24x38mm Series500 TEK

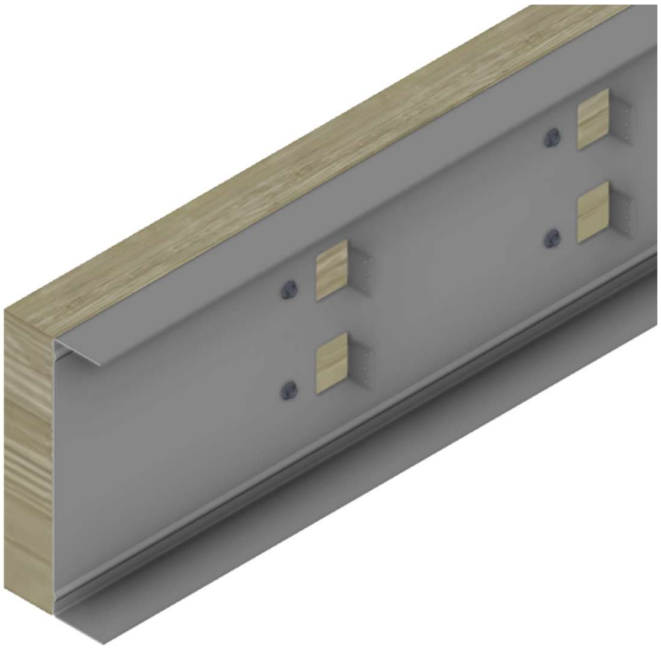
STRUCTURAL STEEL (WEB)





PER TAB LOCATION
2 x 12 - 24x38mm Series500 TEK to welded steel angle

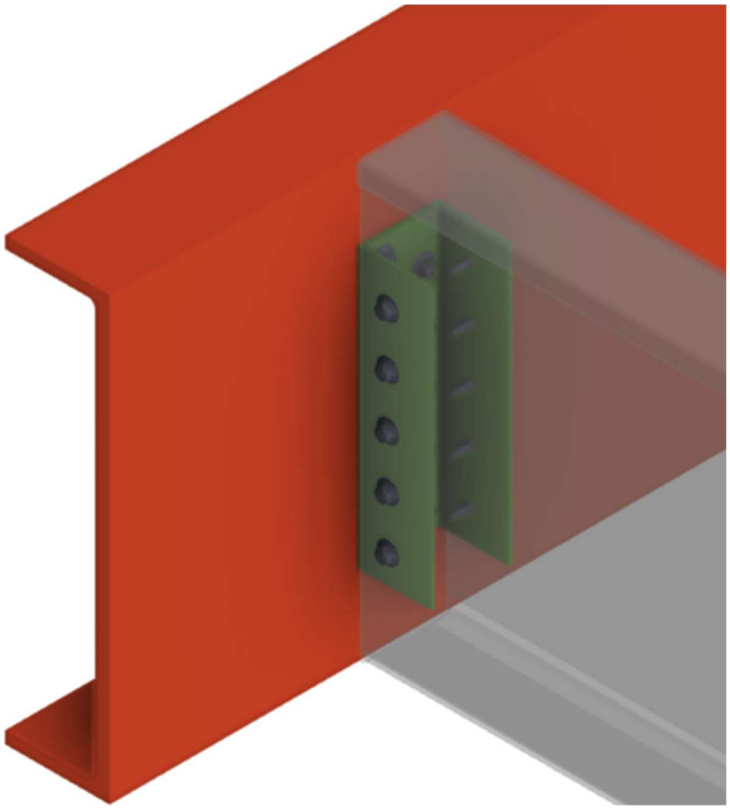
TIMBER BEAM

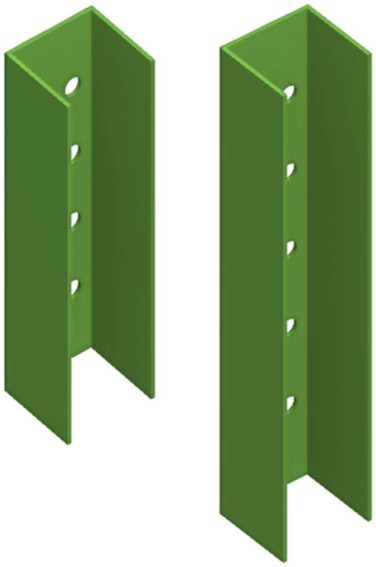


PER TAB LOCATION
12 - 11x40mm Batten TEK

BOX BEAM CONNECTIONS

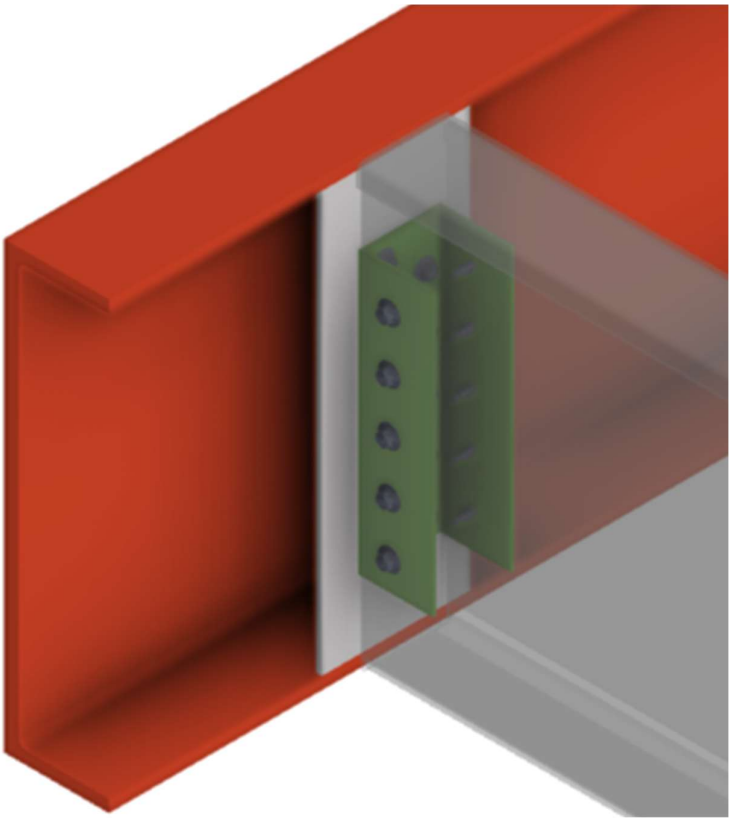
STRUCTURAL STEEL (FACE)

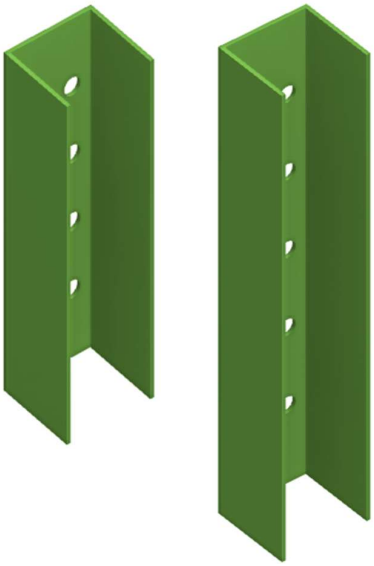




TB190	TB290
Dimensions: 190x60x50x2.4mm	Dimensions: 290x60x50x2.4mm
Box Beam size: 200-250	Box Beam size: 300-360
8 x 12 - 24x38mm Series500 TEK to Structural steel	10 x 12 - 24x38mm Series500 TEK to Structural steel

STRUCTURAL STEEL (WEB)

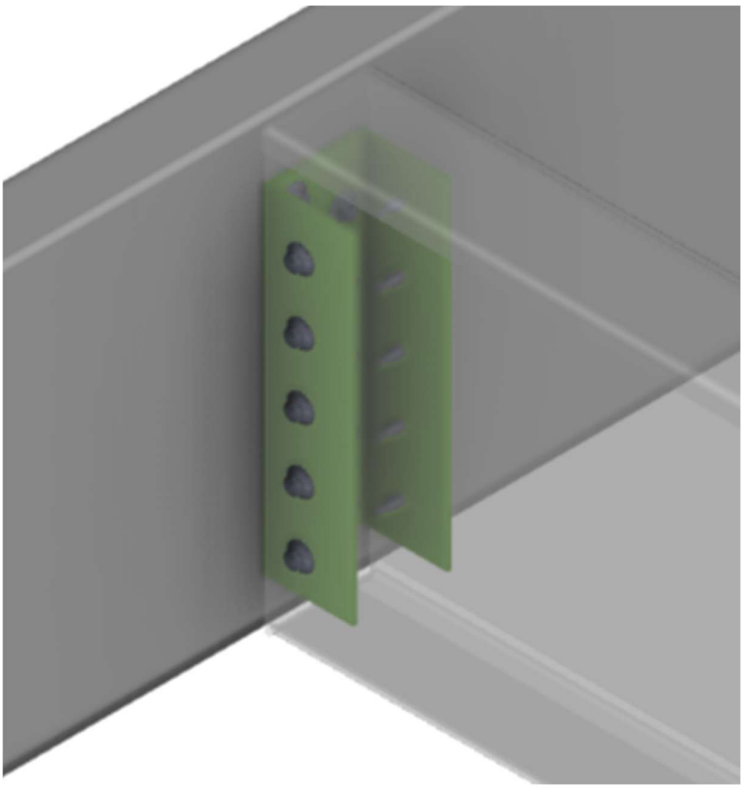


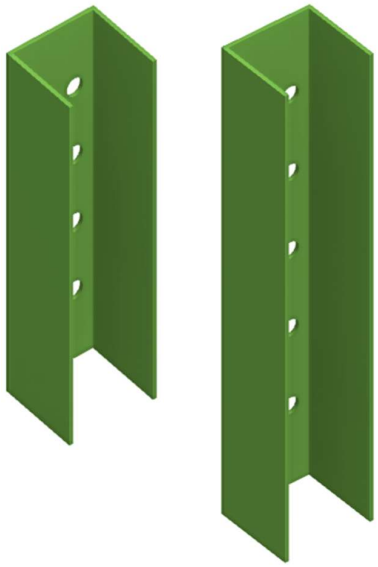


TB190	TB290
Dimensions: 190x60x50x2.4mm	Dimensions: 290x60x50x2.4mm
Box Beam size: 200-250	Box Beam size: 300-360
8 x 12 - 24x38mm Series500 TEK to welded support	10 x 12 - 24x38mm Series500 TEK to welded support

BOX BEAM CONNECTIONS

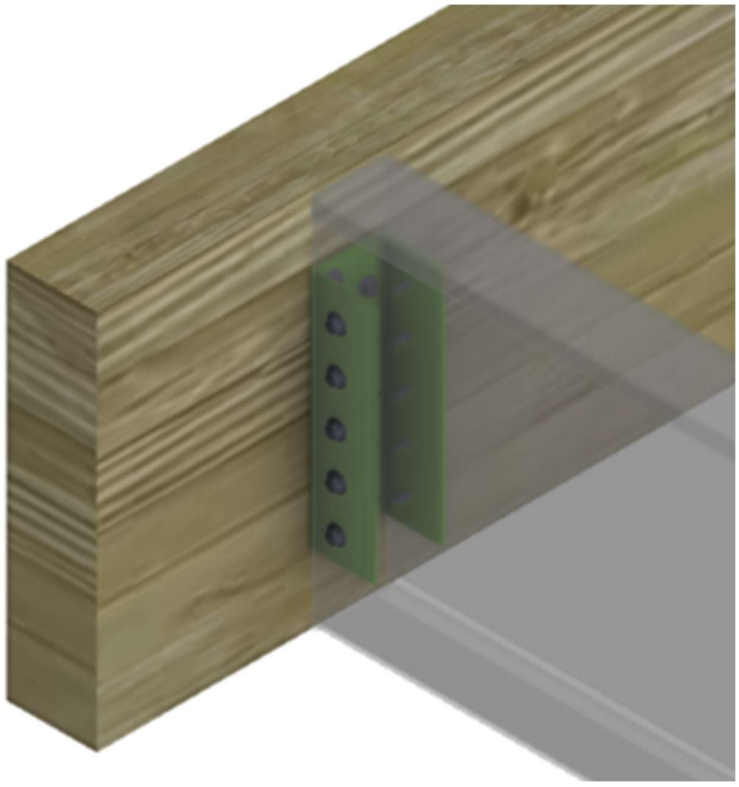
BOX BEAM

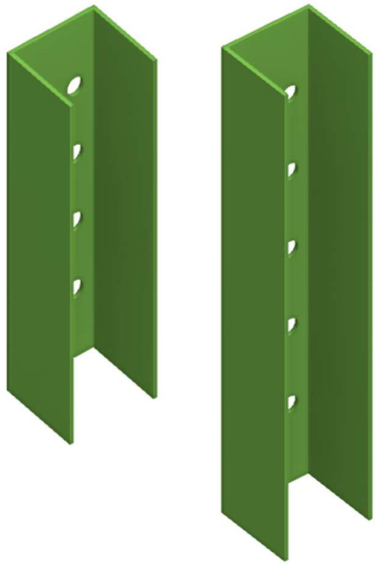




TB190	TB290
Dimensions: 190x60x50x2.4mm	Dimensions: 290x60x50x2.4mm
Box Beam size: 200-250	Box Beam size: 300-360
8 x M8-17 TEK to box beam face	10 x M8-17 TEK to box beam face

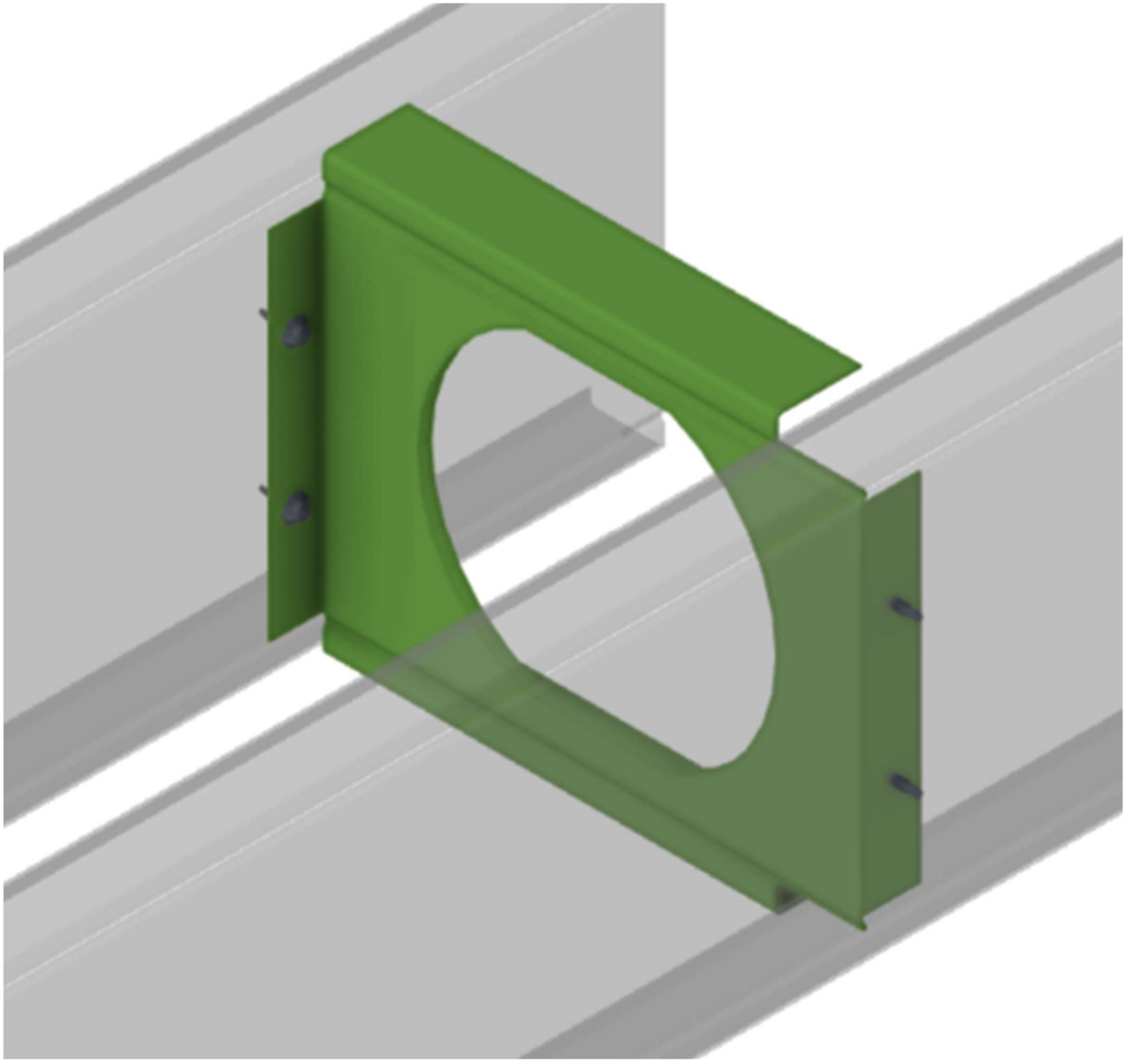
TIMBER BEAM

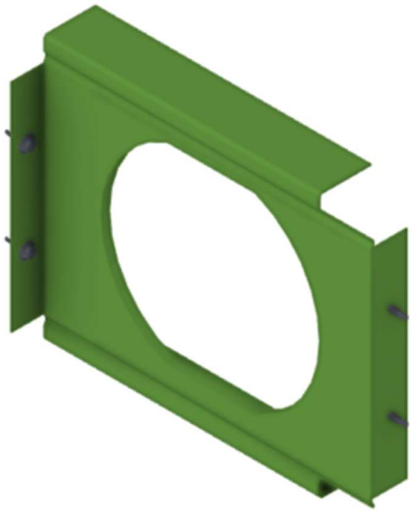




TB190	TB290
Dimensions: 190x60x50x2.4mm	Dimensions: 290x60x50x2.4mm
Box Beam size: 200-250	Box Beam size: 300-360
8 x 12 - 11x40mm Batten TEK	10 x 12 - 11x40mm Batten TEK

BLOCKS

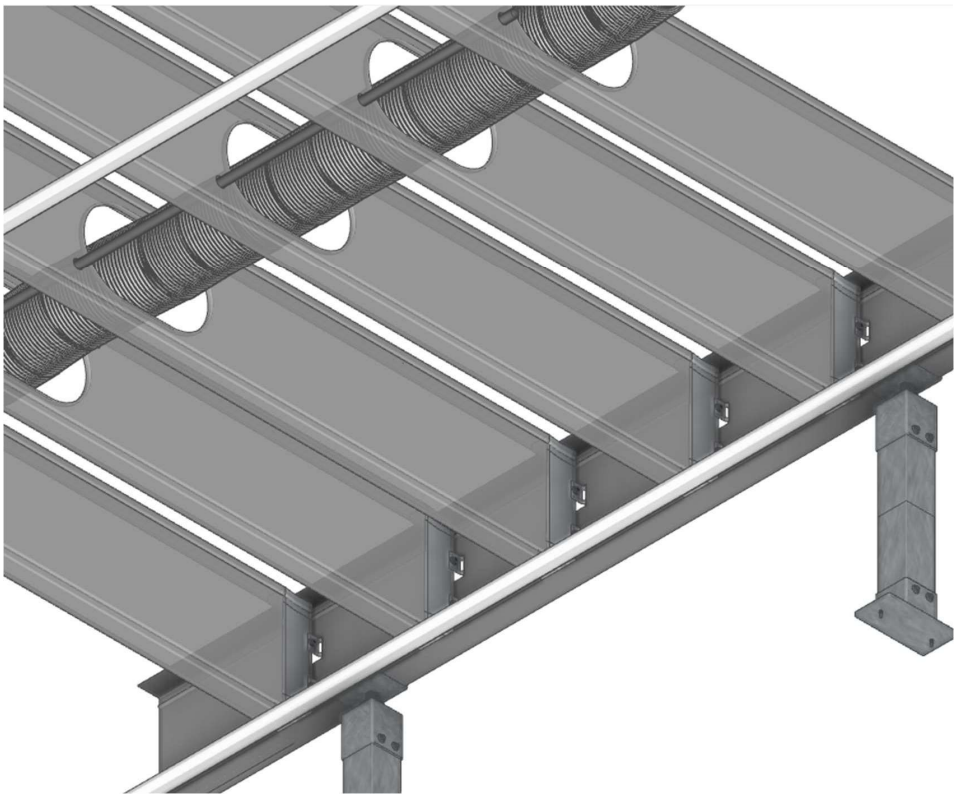




BLOCK
BMT: 1.2mm Min.
Widths: Range: 300mm +
Heights: 200, 250, 300, 360
2 x M8-17 TEK per end

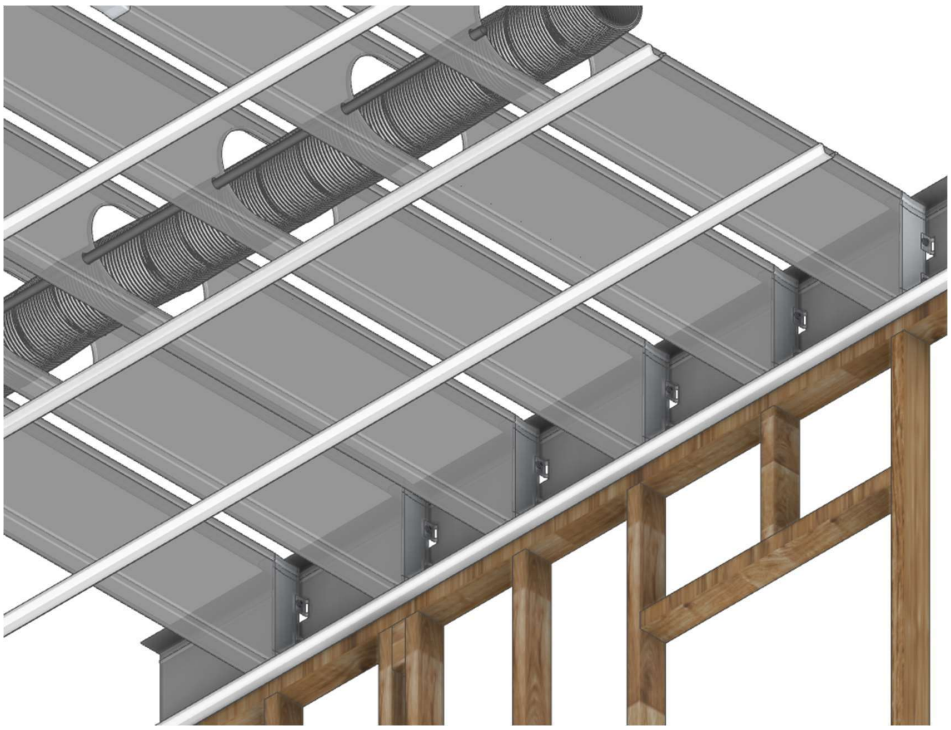
UNDERFLOOR BATTEN RESTRAINTS

SUBFLOOR



SUBFLOOR APPLICATION
Max. 1800 cc
Specifications: Min. 20mm x .42mm G550
Min. 2 x 10 - 16x16mm TEK per intersection

MIDFLOOR



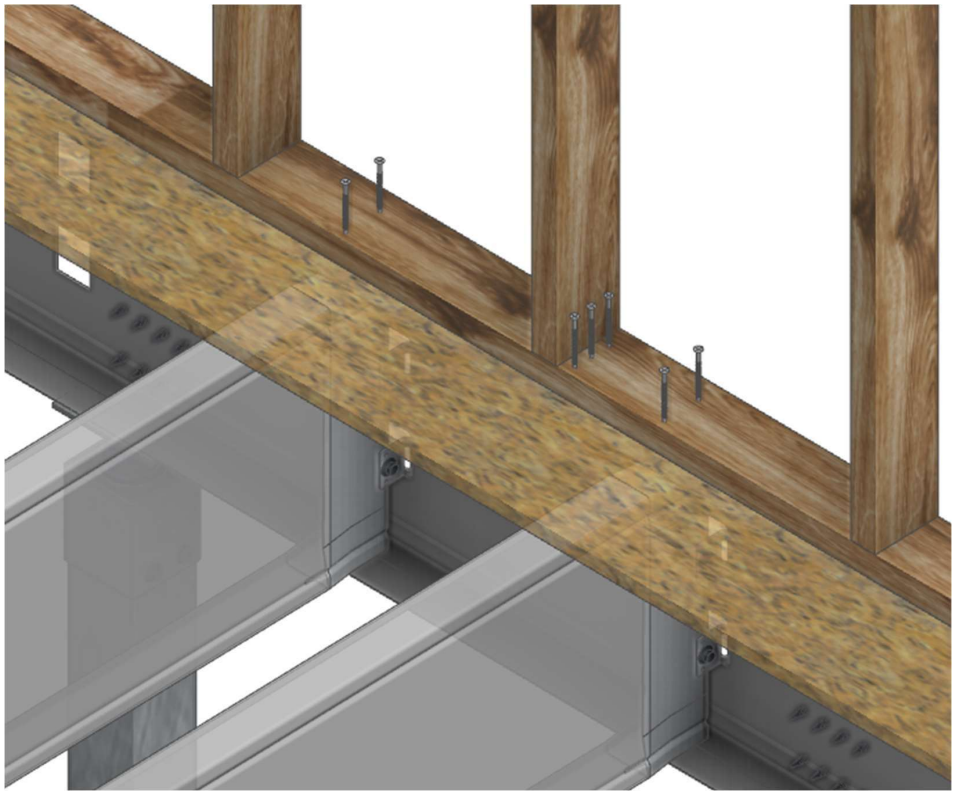
MIDFLOOR+ APPLICATION
Max. 600 cc
Specifications: Min. 20mm x .42mm G550
Min. 2 x 10 - 16x16mm TEK per intersection

SECTION 3:

FRAMING CONNECTIONS

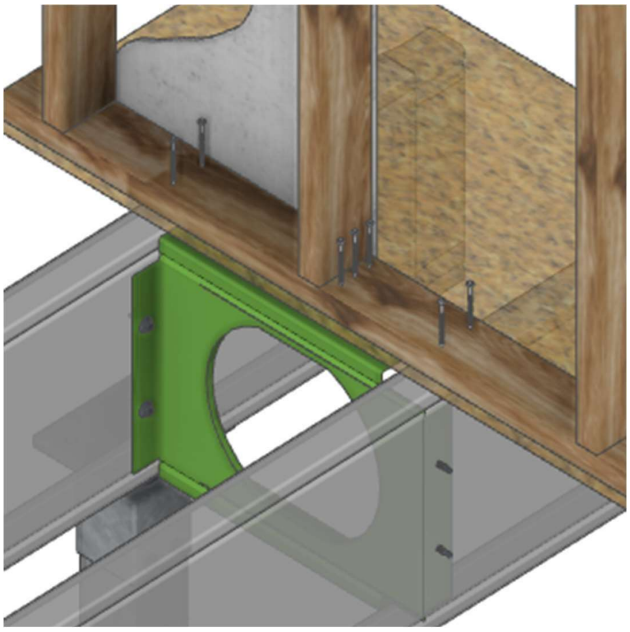
TIMBER WALLS

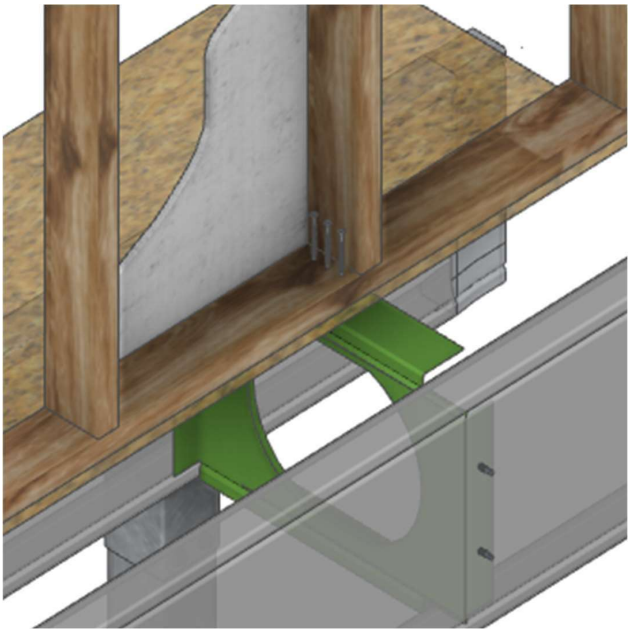
WALLS



WALL TIEDOWN
Fix to Receiver/Box Beam and Joist (Engineer to confirm QTY)
Brace Ends:12-16x70mmWingtip Joist intersection: 12 - 16x70mm Wingtip

WALL BRACE CONNECTION

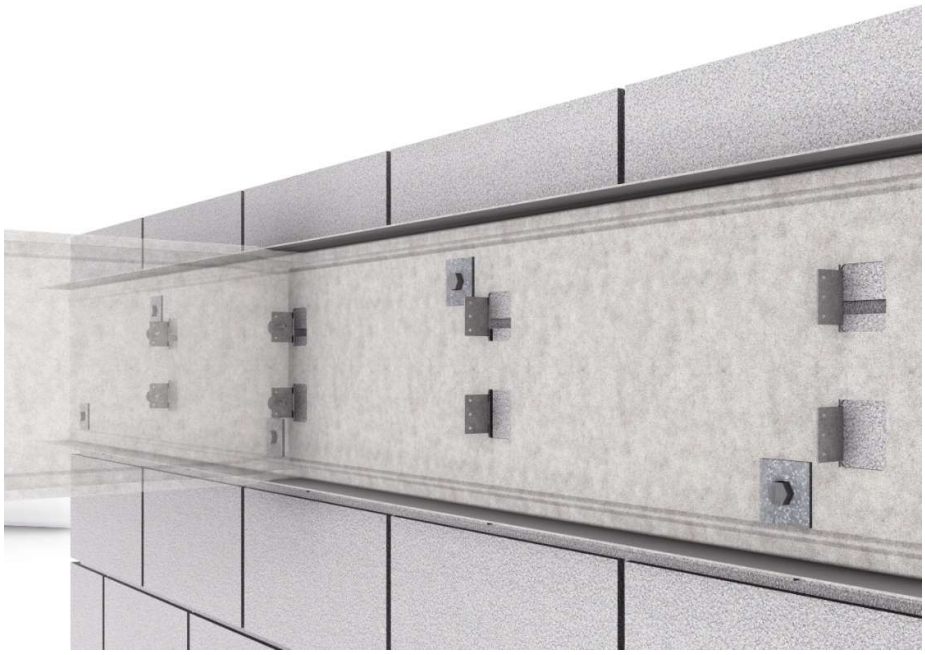




BRACING TIEDOWN -ADJUSENT	
Fix to Block or Joist (Engineer to confirm QTY)	
Brace Ends: 3 x 12 - 16x70mm Wingtip	Joist intersection: 2 x 12 - 16x70mmWingtip

BRACING TIEDOWN -PARRALEL	
Fix to Block or Joist (Engineer to confirm QTY)	
Brace Ends: 3 x 12 - 16x70mmWingtip	Joist intersection: 2 x 12 - 16x70mm Wingtip

BLOCK WALL

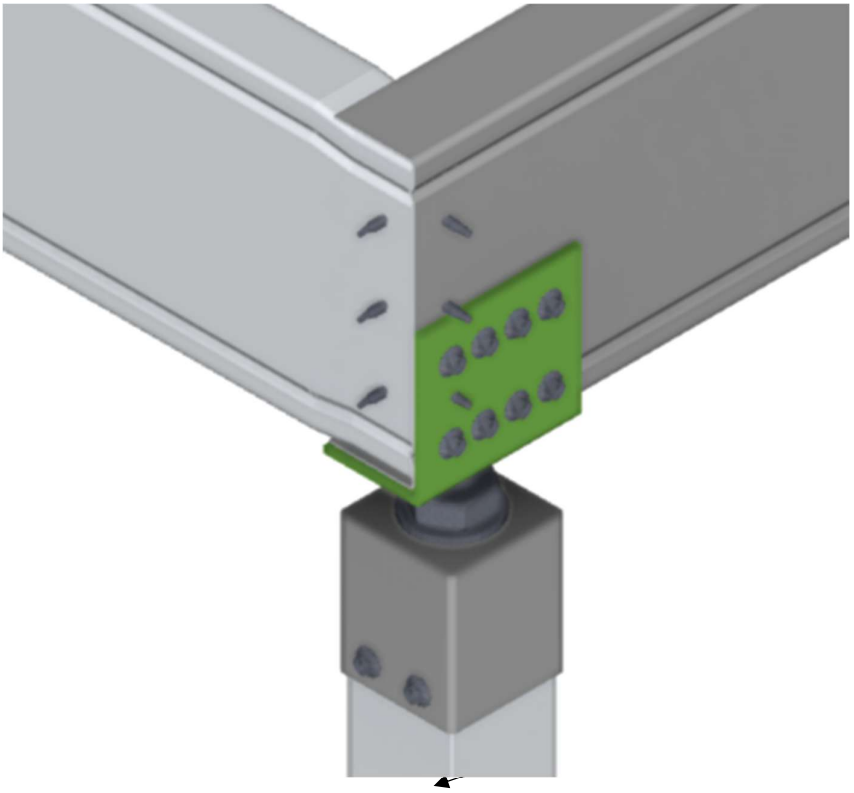


WALL CONNECTIONS
Fix Receiver/ Joist to Block wall
Typical Fastening: M12 x 75 Galv (min.) with 50 x 50 x 3 Galv Washer Spacings/Locations: 450mm centres and staggered. Min. 50mm from top and bottom flange Engineer to confirm (project specific)

SECTION 4:

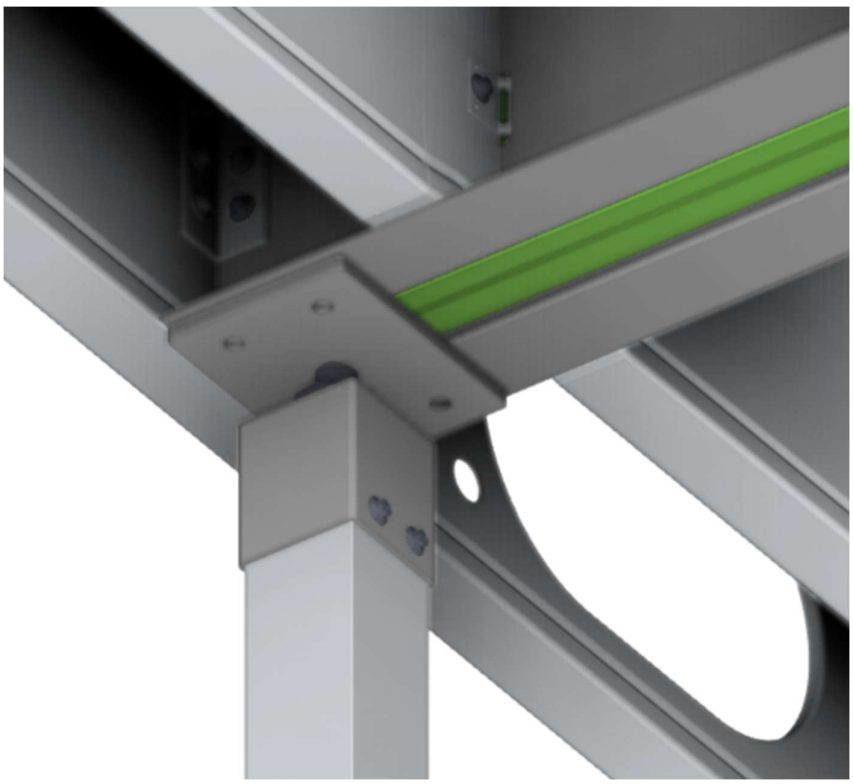
SUBFLOOR CONNECTIONS

EXTERNAL LOCATION



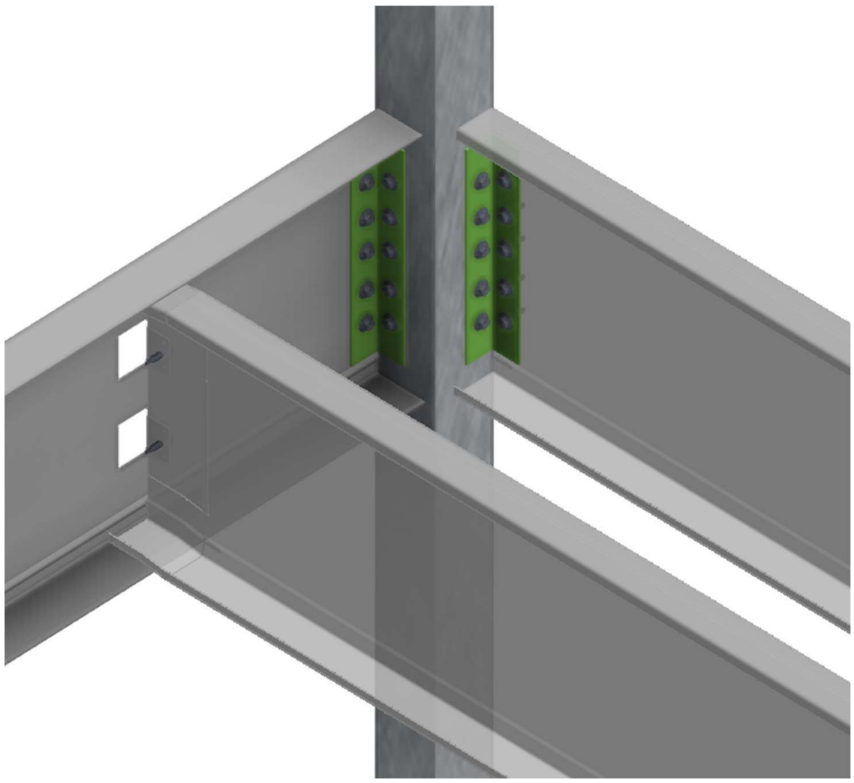
L UPSTAND
Straight or Corner upstand options
Supplier: 3rd party
SHS or Screw Pier System
Face Fixed: 2 x 12-20 TEK. Engineer to confirm QTY per bracket (project specific)

INTERNAL LOCATION



FLAT
Varias sizes to suit project
Supplier: 3rd party
SHS or Screw Pier System
Option 1: M12 x 50mm with washer
Option 2: 12 - 24x38mm Series500 TEK. Engineer to confirm QTY per bracket (project specific)

CORNER POST SAMPLE LOCATION 1



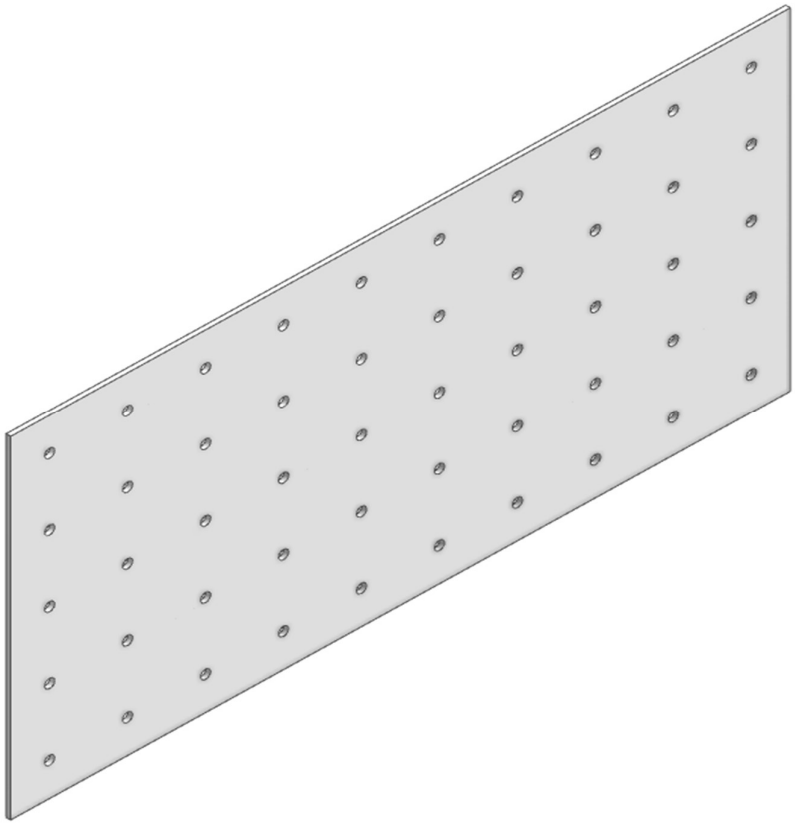
CORNER CUTOUT OPTION
Ground to Roof/Floor detail
SHS or Screw Pier System
Corner Brtacket: ECB190/290 with 12-20 TEK. Engineer to confirm QTY per bracket (project specific)

SECTION 5:

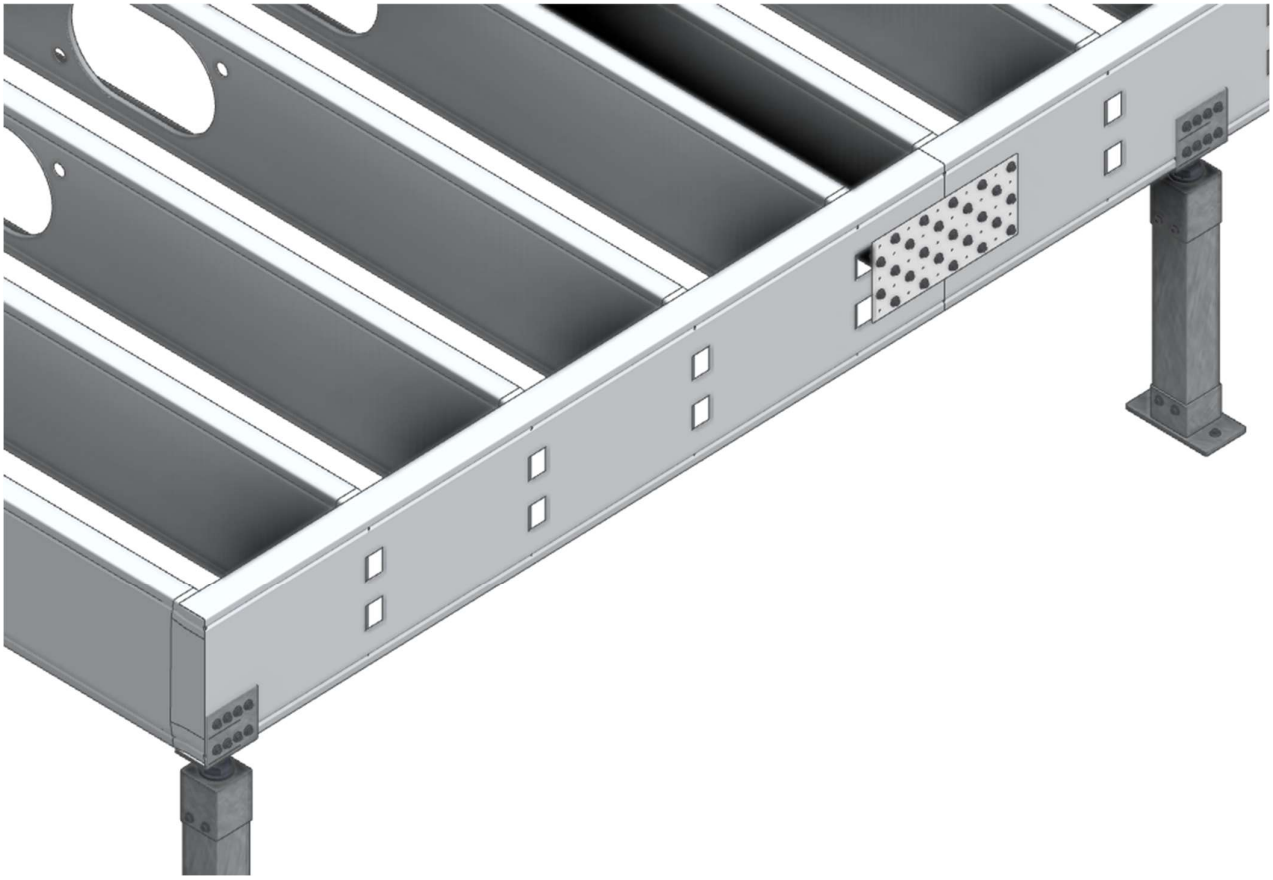
FLOOR REMEDIAL OPTIONS

FLOORING CONNECTOR

GUSSETT PLATE



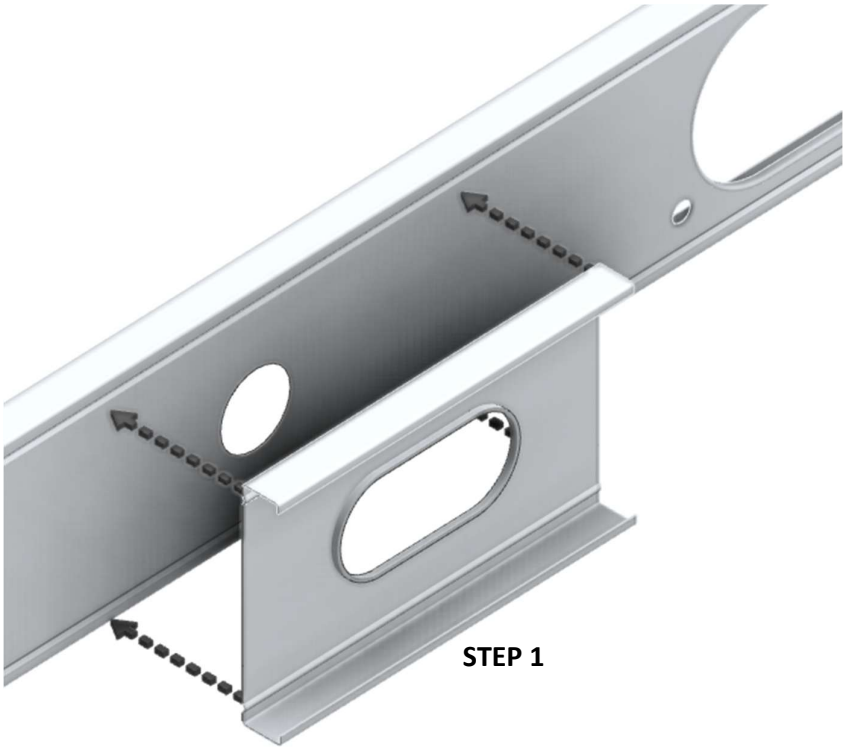
GUSSETT PLATE
1 size to suit project
Min. 12 - 14x20mm TEK Engineer to confirm QTY per bracket (application specific)



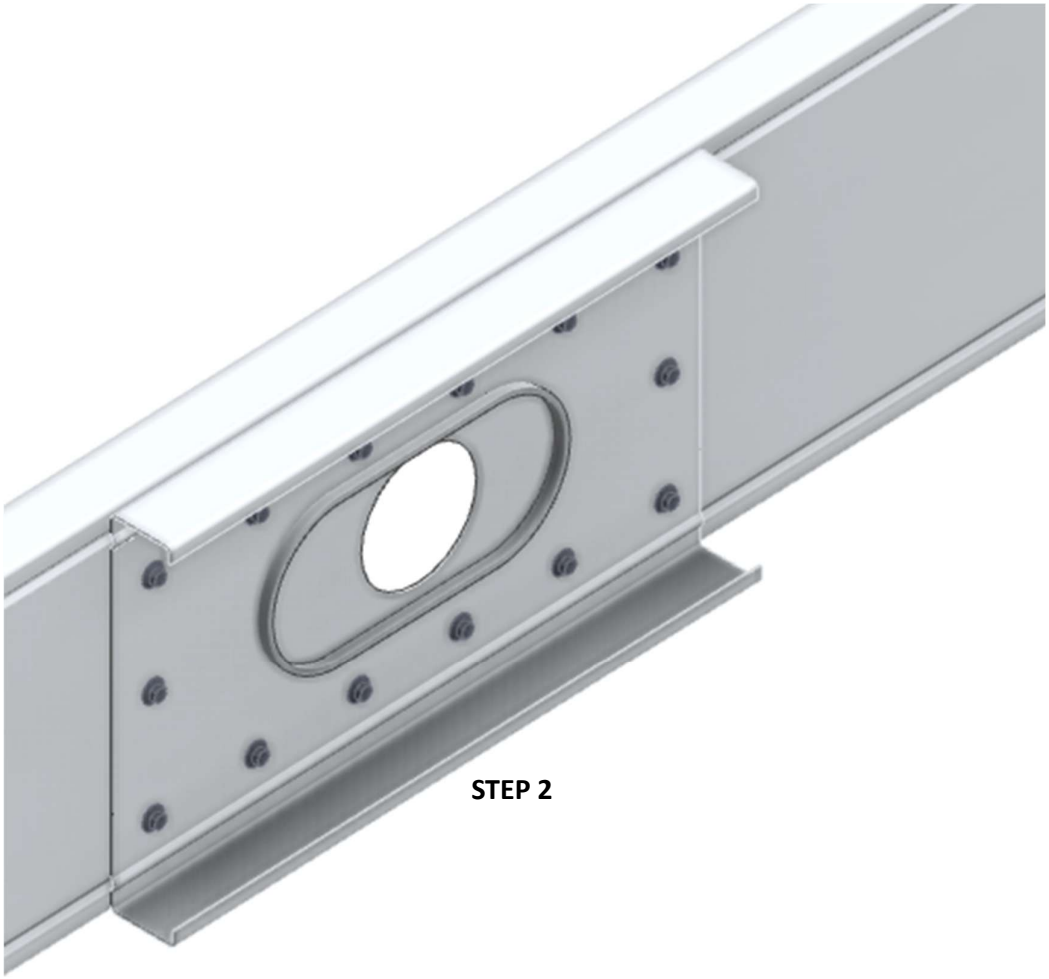
ADDITIONAL SITE SERVICE HOLE

HOLE PLATE

HOLE PLATE
Supplied by Ultraspan. Size to be confirmed
STEP 1: Locate Plate over cut hole. Must be placed B2B and cut hole larger than plate to ensure no exposed edges for subcontractor
STEP 2: install min. 6 x 12 - 14x20mm TEK to top and bottom incl. 1 one is middle end



STEP 1



STEP 2

FLOOR SET-DOWNS

CREATE 50MM STEP-DOWN FOR WET AREAS, ENTRY, DECKS ETC

STEP 1: CONNECT UNEQUAL PANELS TOGETHER

STEP 2: PACK REQUIRING STEP-DOWN AREA

STEP 3: INSTALL FLOORING AND CONTINUE FRAMING AS PER PLANS