

Steel Floor Framing Solutions

COMPLETE PACKAGES FOR DOMESTIC FLOORS, DECKS AND ADDITIONS

Product Manual & General Information

- Individually designed solutions
- Full design and quote service
- Drawings and take-off documentation
- Independent engineering certificate
- All floor framing sections and brackets

Steel Floor Framing Solutions

Complete packages for domestic floors, decks and additions

Stramit Building Products (Stramit) and Steel-MAX Building Systems (Steel-MAX) now offer a strong, versatile, cost-effective, DIY-friendly steel floor framing system, which is a complete and individually certified* solution.

The system combines Stramit® structural members with Steel-MAX posts, brackets and accessories. The design and delivery process has been rationalised to ensure best possible customer service.

Quick design and quote. It's easy to get a quick design and quote for your project. Just e-mail or post your dimensioned job plans, with your contact details and any special instructions to any Stramit branch or distributor.

What we require for the design. Include a clear and complete copy of your architectural plans, to provide the designer with an accurate overview of the job. We need to know exactly what you are building and how big it is, so the more information you provide, the more accurate the quote.

Include dimensions, loadings, specifications, soil tests, and any other data available, including existing floor framing designs.

Individual designs. Because each floor is individually designed, we can use a wide variety of design solutions to accommodate almost any application.

Variations and adjustments can be made easily and quickly after you receive the Preliminary Assessment Design.

How long will it take? The initial design and quotation process will take just a few working days. After ordering, allow a few more working days for final construction details and engineering.

Once complete, delivery to site is quick and efficient.

DIY friendly. Your individual steel flooring package is easy to install. It's a DIY-friendly system, specifically designed for your individual project.

It comes complete with either telescopically adjustable or screw adjustable Steel-MAX stumps, Stramit® "C" bearers and joists, cut to length where possible, and Steel-MAX connector brackets and fixings. It can also include large steel beams, support posts and subfloor bracing, where needed, to complete the system.

You receive individual job certification if required, as well as installation guides.

Quick to install. Bearers and joists can be pre-cut to length, speeding installation and saving on waste and valuable time on site. Posts are supplied in stock lengths, for cutting to size on site.


The long-spanning steel members help save on footings, and can open the sub-floor below for other use.

Availability. The system is available from Stramit and Steel-MAX distributors throughout Australia. For more details, visit www.steelmax.com.au or www.steelfloorsaustralia.com.au

Certification. Optional engineer's certificate can be issued by Steel-MAX, based on the information available at the time. The certification is for the steel floor system only; it does not include footings or any other structural element above or below the floor frame.

Corrosion protection. The system components are manufactured from corrosion protected steel. All Stramit® bearers and joists have a Z350 coating. This means they will stand up to most environments, except for the most extreme situations referred to in the separate Stramit® Residential Floor Framing System Manual and in the Extra Information Items PDF available on the Steel-MAX web site www.steelmax.com.au

*Certification is undertaken by independent engineers familiar with steel floor design.



The system is not suitable for applications closer than 300 metres to the coast or where it is exposed to corrosive elements and/or fallout from heavy industrial environments or similar.

Where extra protection is needed, Stramit® bearers and joists manufactured from special ZAM® coated steel can be used in conjunction with Steel-MAX's standard Dacrotized® fittings and hot-dip galvanised stump tube, to form a very long lasting and corrosion resistant structure.

Further protection can be achieved by painting the members with a rubberized metal primer such as Wattle PermaChlor® PR30 or equivalent.

Warning: CCA or similar treated timber should not be used where it is in contact with zinc-coated steel.

If this does occur, sufficient full surface treatment will be necessary to all steel members to protect them against the leaching of copper on to zinc coatings and to protect against other potentially corrosive elements contained in the treated timber.

Termite protection. Steel framing complies with the Australian Standard Termite Code AS3660.1. The clear and clean surface of the steel members exposes the trails of termites for inspection and treatment where necessary.

Fire protection. Steel is naturally fire resistant and non-combustible, but the flooring system can also be designed to incorporate fire resistant insulation products to comply with BAL (Bushfire Attack Level) and energy efficiency requirements of the BCA and local regulations.

Fixing flooring to steel joists. Strip and sheet flooring can be gun-nailed or screw-fixed to the steel joists, in conjunction with appropriate adhesives.

If required, timber battens can be fixed to the tops of joists, for hand-nailing of decking or decorative flooring. Details are included in the Installation Guide.

Cutting steel framing members.

Post and stump tube is supplied in 8m stock lengths for cutting on site. All channel bearers and joists are supplied pre-cut where possible. This keeps the need for site cutting to a minimum.

Where cutting is necessary, use special burr-free cold cutting saws. Drop saws and hand-held circular saws with metal cutting disc blades are also suitable.

Components. Floor frames comprise Stramit "C" channel bearers or RHS bearers and channel joists, supported on Steel-MAX stumps.

All connections are Tek screw fixed, using Steel-MAX connector brackets, which are specially designed for the system.

Joist sections used in floor designs are available in various depths to suit the required loads and spans. Hot-rolled steel beams and sub-floor bracing are not part of the standard offer, but can be supplied on special order to designs by others.

All members, fittings and fixings included in each specific job application are covered by the system certification for that job.

Installation. Refer to the separate Installation Guide for construction details.

Special loads and design criteria. Each floor framing system is individually designed to suit each job. This can include domestic and light commercial load applications, incorporating various wind and snow loads, as well as heavy floor loads.

Designs comply with the requirements of the BCA. Individual design of each flooring system means that the design criteria can be varied to suit each project.

The system is not limited to domestic or residential applications and each job is assessed independently.

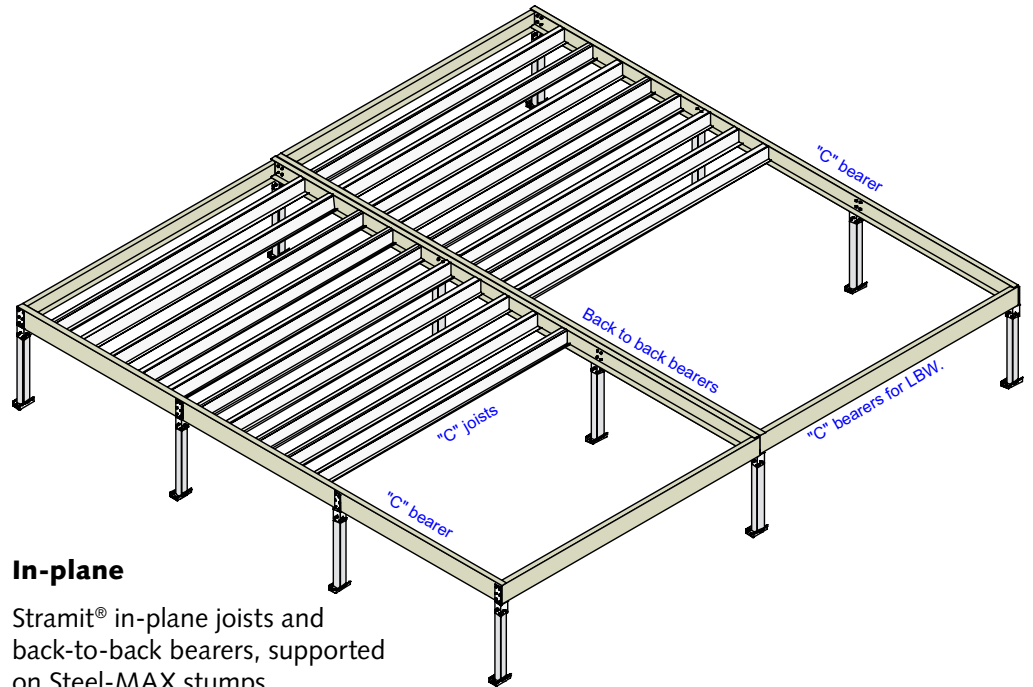
Light industrial and commercial floors with special load requirements, such as mezzanines, schools, offices, gyms and parking can easily be designed as required.

Disclaimer. This document must be read in conjunction with the separate "General Notes & Specification" form, supplied with every preliminary design. This separate form contains important notes, hints, design criteria, system specifications and disclaimers relevant to the floor framing system.

Stramit and Steel-MAX standard conditions of supply also apply to the supply of the floor framing system.

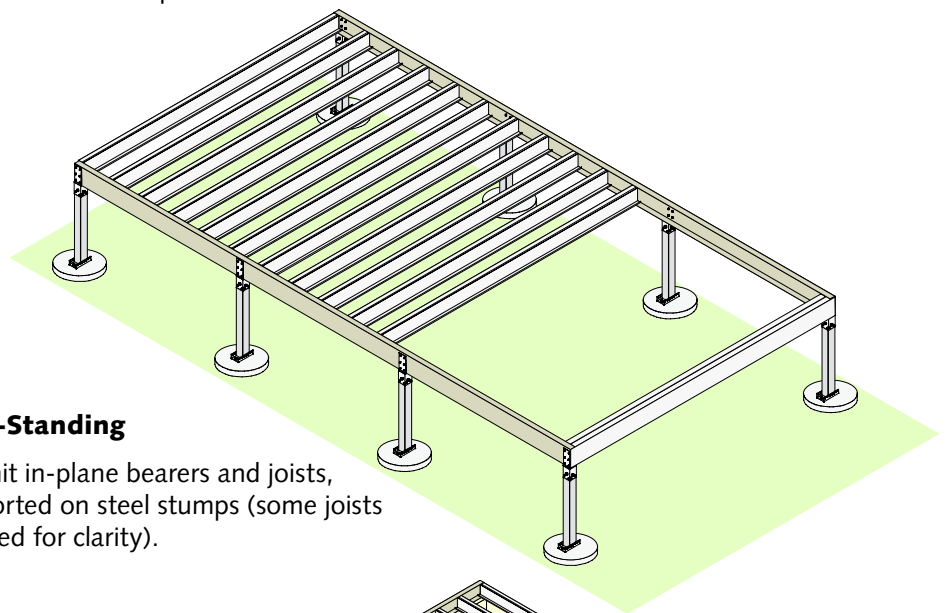
Steel Floor Framing - Applications

The system is very versatile and can be adapted to most domestic, light commercial and mezzanine applications. The system is ideal for free-standing structures, brick veneer, brick or block base and masonry walled buildings.



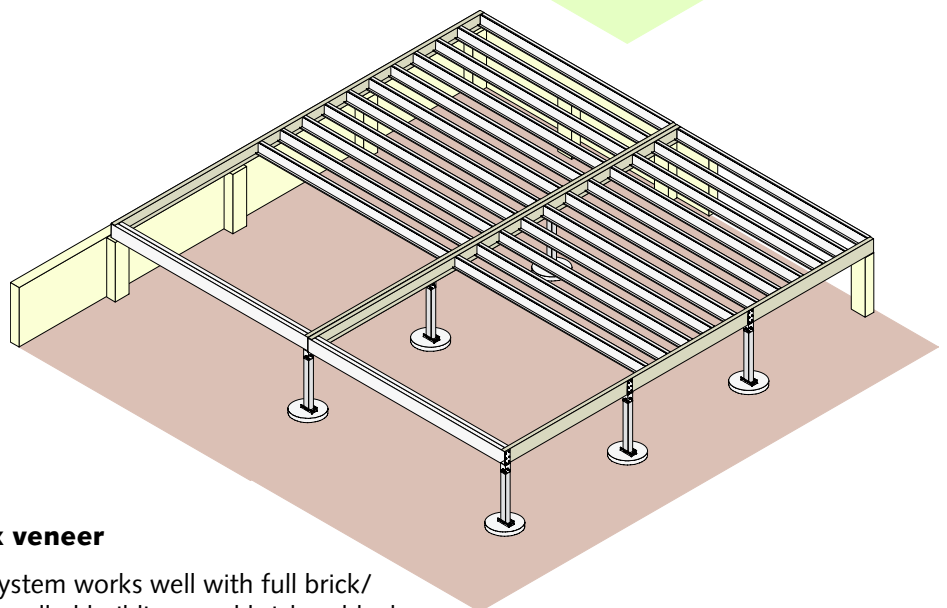
In-plane

Stramit® in-plane joists and back-to-back bearers, supported on Steel-MAX stumps.



Free-Standing

Stramit in-plane bearers and joists, supported on steel stumps (some joists omitted for clarity).

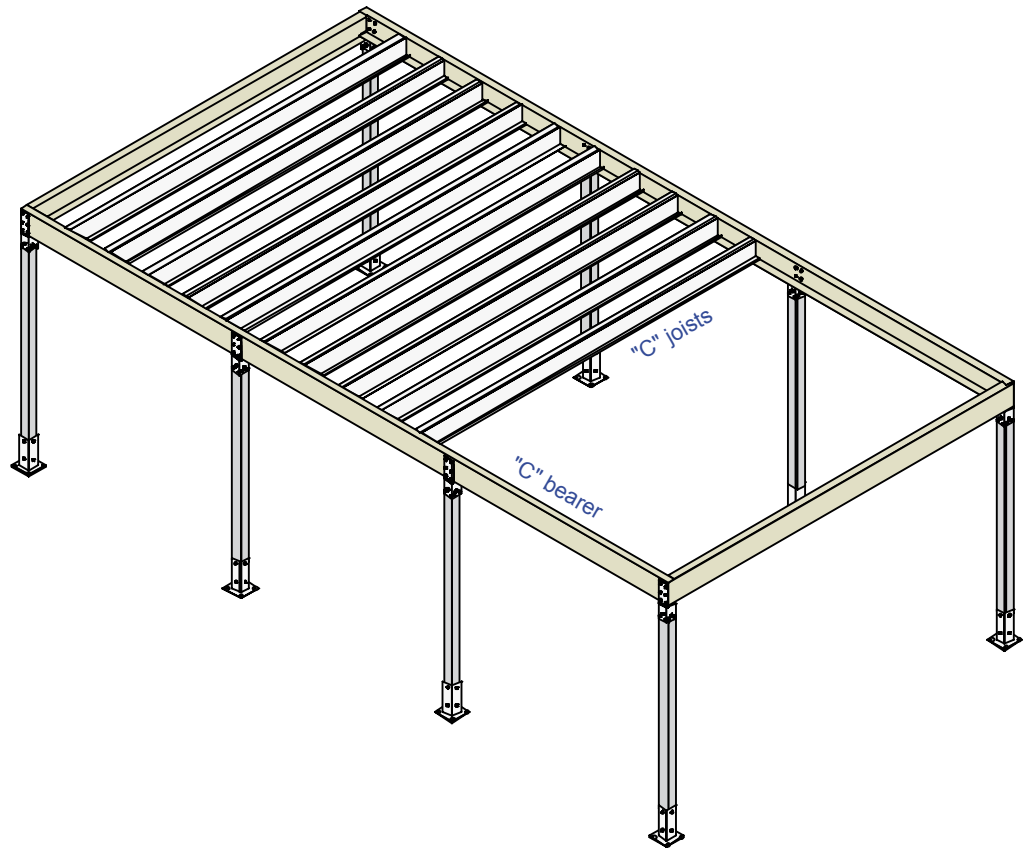


Brick veneer

The system works well with full brick/block walled buildings and brick or block base perimeter walls.

Mezzanine floors

Each floor is individually designed to suit the load and spanning requirements. Large steel beams are often used as primary bearers to achieve maximum spans for usable areas below mezzanines.

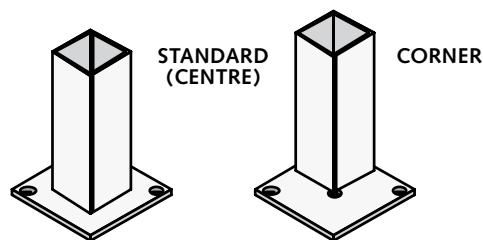


Mezzanine flooring system comprising Stramit® in-plane floor framing and Steel-MAX stumps with moment base plates.

Moment base plates

Steel-MAX Moment Base Fittings have a moment value of 5.2 kNm. They are used on support posts to help distribute heavy loads and to provide extra bracing to minimise the need for cross-bracing, which may obstruct access below mezzanines.

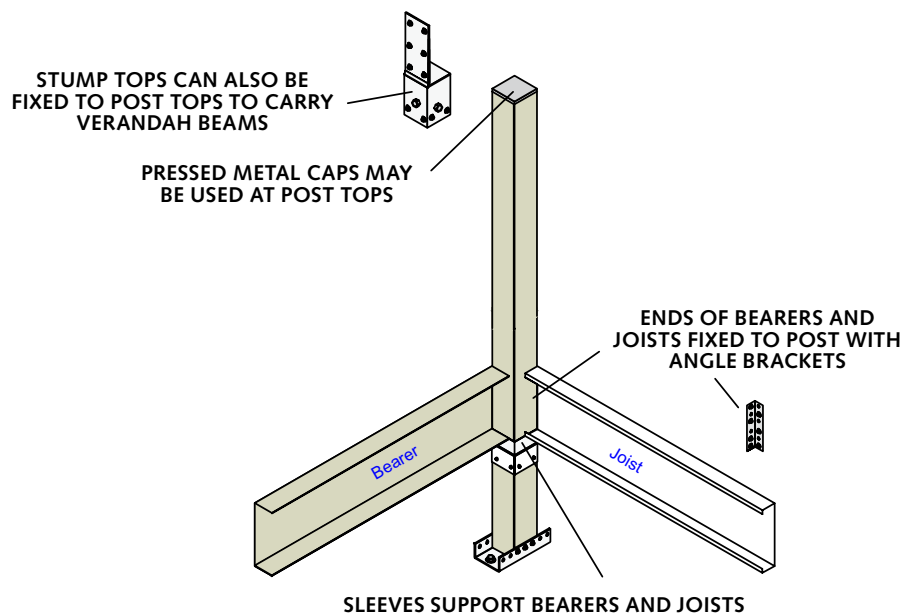
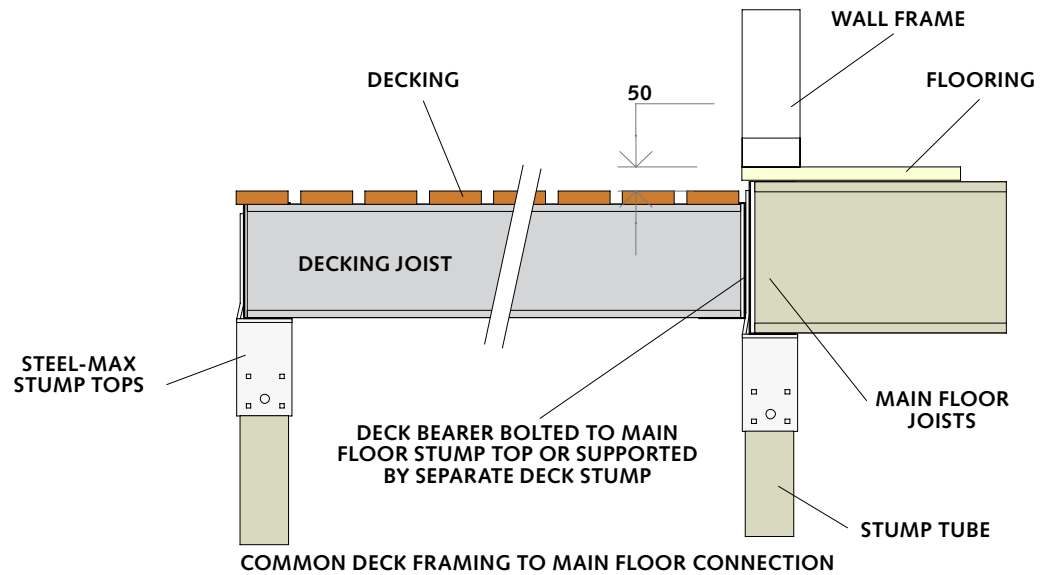
Steel-MAX special 16mm cross-bracing can be used in conjunction with 89-90mm mezzanine support posts, to provide up to 22kN of bracing value per set.



90MM MOMENT BASES

Verandahs

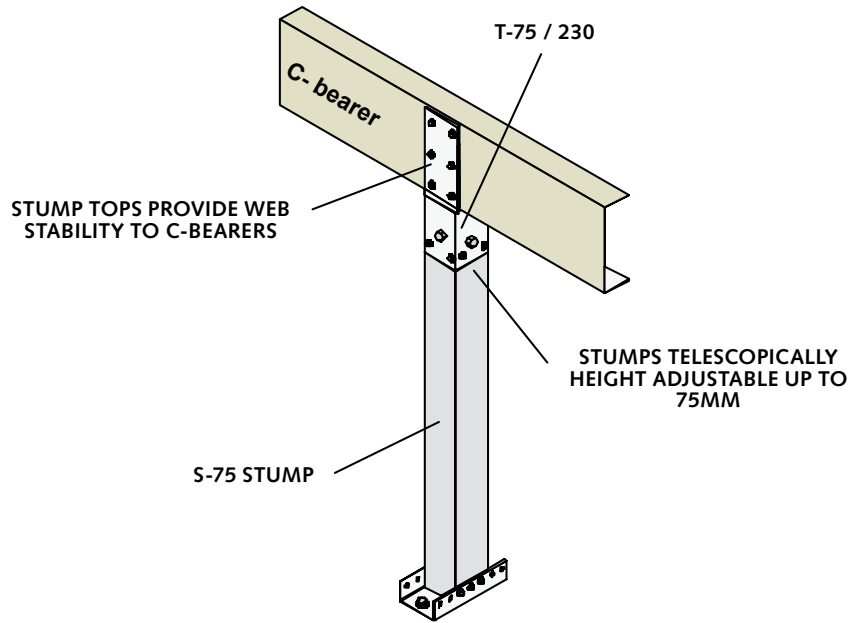
Decks and verandahs are easily built as either stand-alone structures or connected to new or existing buildings. Verandahs and decks may be stepped down as needed.



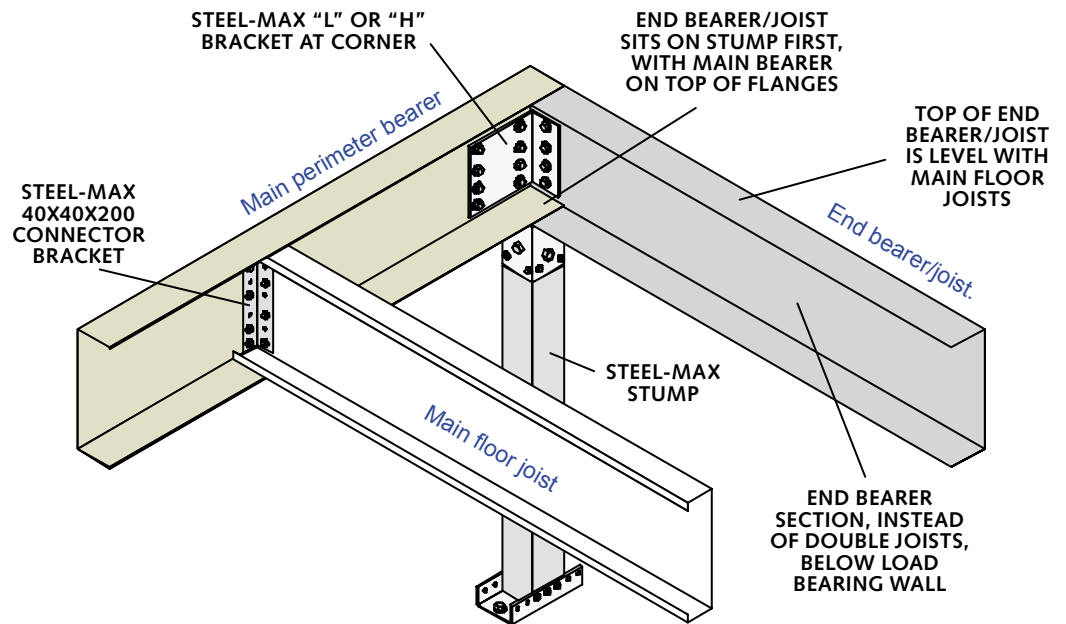
Verandah posts can be fixed as stumps below to platform level, or posts can continue up to rail or roof height.

Steel Floor Framing - Connections

Stramit® C-channel bearers and joists are supported on Steel-MAX stumps and connected by Steel-MAX brackets specially designed for the system. Most connections are Tek screw fixed for ease and speed on site.

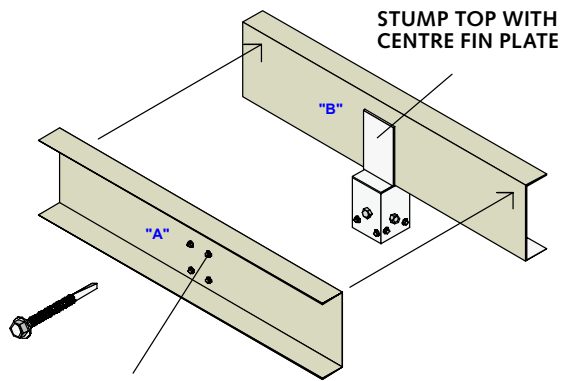


STUMP-BEARER CONNECTION



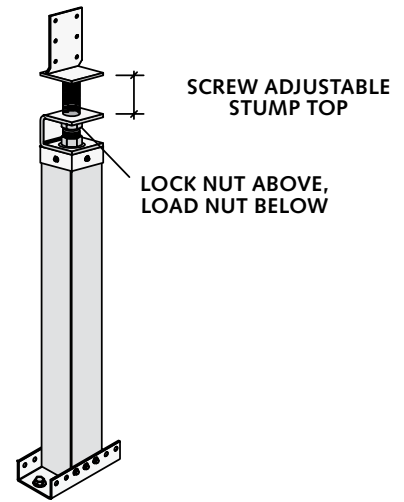
BEARER AND JOIST CONNECTOR

Steel Floor Framing - Connections

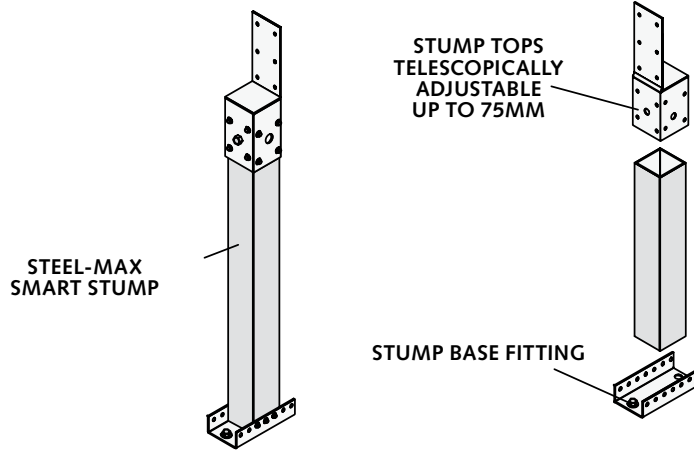


BACK-TO-BACK BEARERS ARE FIXED WITH TEK SCREWS THROUGH WEB OF BEARER A, STUMP FIN PLATE, AND BEARER B.

BACK-TO-BACK BEARERS



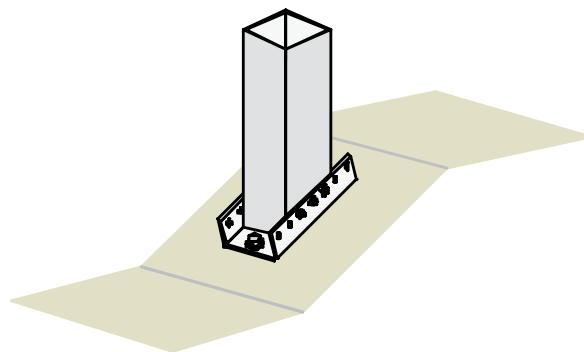
SCREW ADJUSTABLE STUMP



TELESCOPIC STUMPS

Sloped footing

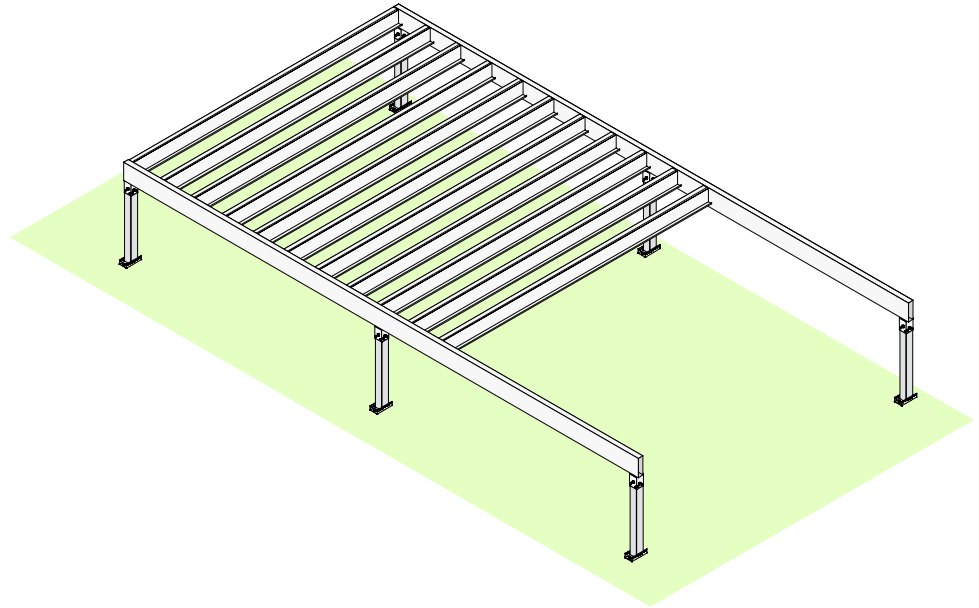
Bevel cut base of stump to suit footing angle



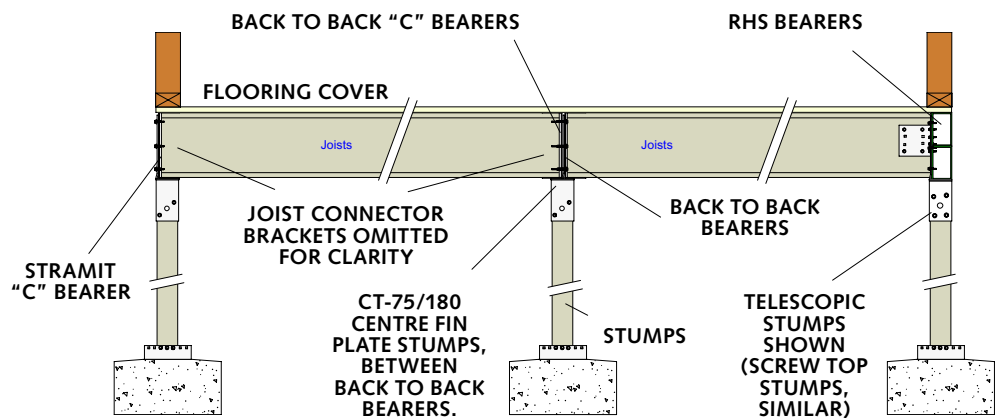
Steel Floor Framing - Construction

Most floor frames are designed with the floor joists running in-plane between the centre intermediate bearers and the outer end bearers. In-plane systems are also used for decks and other applications where minimum framing depth is required.

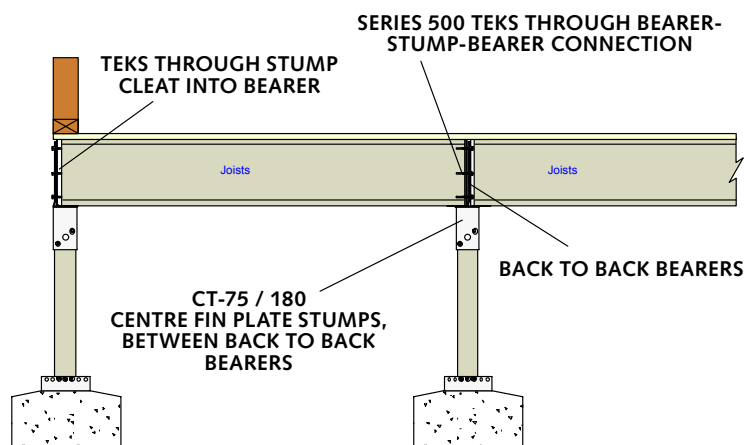
In some cases RHS outer beams are more appropriate, e.g., for larger spans or for transportable homes, where hot rolled beams provide the strength needed for lifting and transportation.



COMPOSITE FLOOR FRAME – RHS BEARERS & CHANNEL JOISTS



IN-PLANE JOISTS BETWEEN CHANNEL BEARERS (LEFT, CENTRE) AND RHS BEARERS (RIGHT)



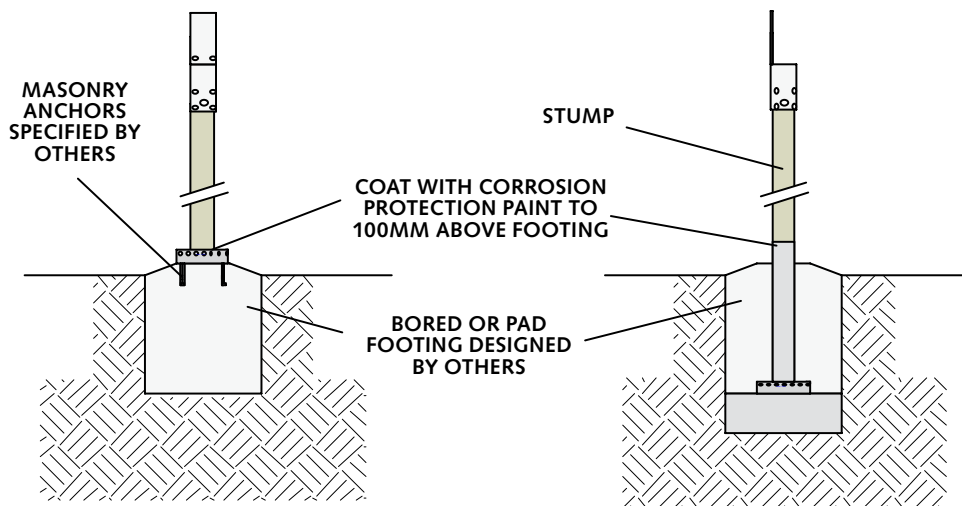
IN-PLANE JOISTS FIXED BETWEEN BEARERS

Footings

Footings are site specific and will vary for each job, depending on soil conditions, wind and structure loads and so on.

Footings must be designed independently by your own local engineer, based on specific site knowledge. They are NOT included in the floor system design offer.

Note: All footing designs and base anchor connections to be designed and certified by others. Optional footing design suggestions are available for deep reactive soil conditions.



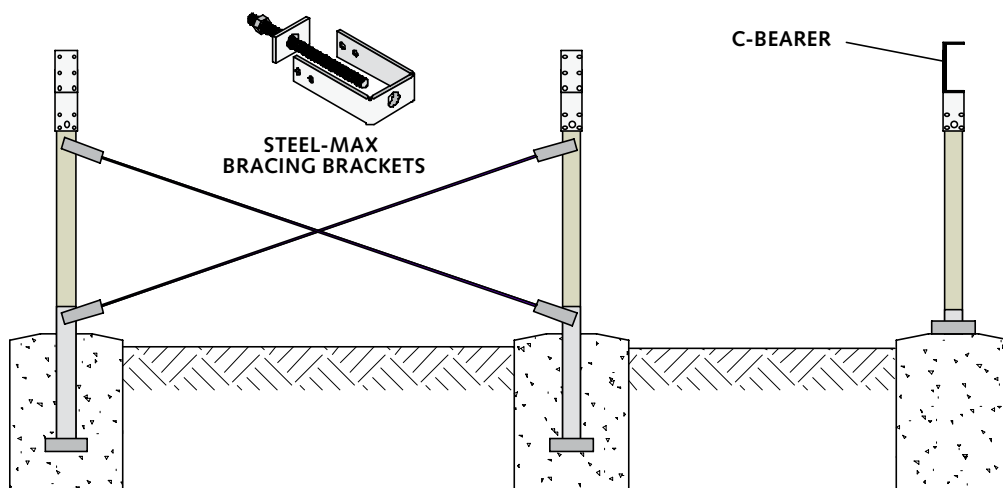
STUMP TO FOOTINGS CONNECTIONS

Sub-floor bracing

As with footings, sub-floor bracing is designed for on site conditions. They will also vary depending on the stump connections to the footings, as stumps cast into the footings will need less bracing than stumps fixed to the top of the footings.

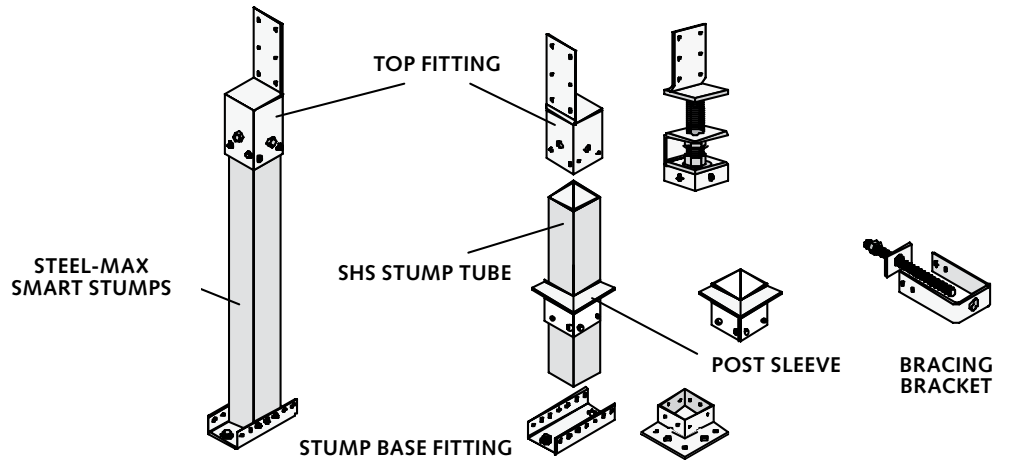
Sub-floor bracing must be designed independently by your own local engineer, based on the footing design and specific site knowledge. Steel-MAX M12 Cross-Bracing sets provide up to 15kN capacity.

Although bracing system components can be supplied, they are based on designs by others. Footing and sub-floor bracing designs are not included in the floor system design offer.

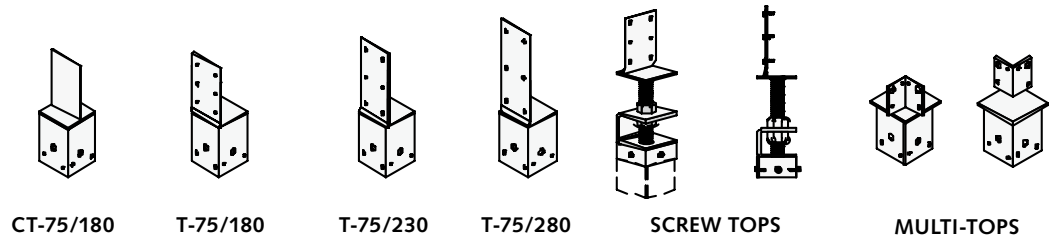


BRACING CONNECTIONS

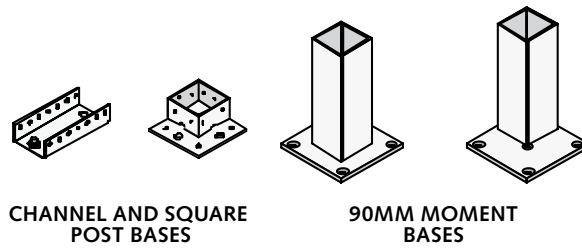
Steel Floor Framing – Fittings



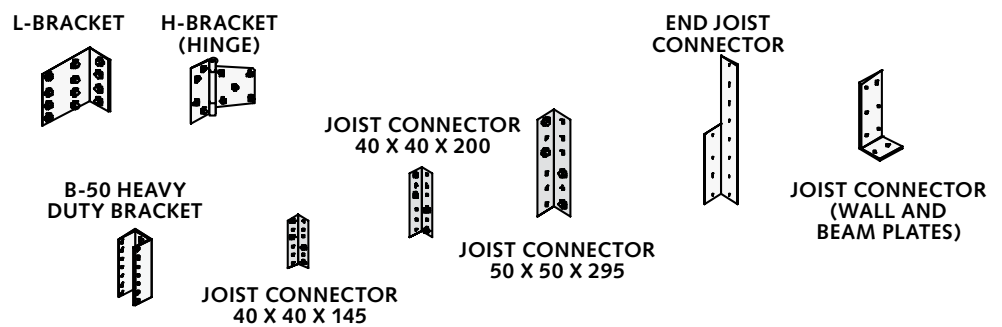
STEEL-MAX SMART STUMPS



STUMP TOPS



STUMP BASES



CONNECTOR BRACKETS

DISTRIBUTOR

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Building Systems

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Building Products

Note: The information contained in this document was current at time of publication and is subject to change at any time without notice. Always check with the Stramit supplier or Steel-MAX to ensure the information is current.

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