

# Steel Sub-Floor Framing System

## General Notes and Specifications

**ENSURE THAT A COPY OF THESE NOTES IS AVAILABLE ON SITE**

### WHAT IS PROVIDED WITH YOUR FLOOR FRAMING SYSTEM

Unless otherwise stated, the Sub-Floor Framing System contains and consists of:

#### STANDARD INCLUSIONS

- Stumps (including tube, base fittings and telescopic tops)
- Bearers (channel or tube or both)
- Joists
- Connector brackets
- Tek screws
- Working drawings

#### OPTIONAL

- Engineer's letter of certification (steel floor system only)

#### NOT INCLUDED

- Footing designs
- Sub-floor bracing designs
- Sleeve anchors (DynaBolts)
- Corrosion protection paint
- Hot-rolled steel beams
- Bracing rod and nuts

Installation guides and fact sheets are available on the Steel-MAX website [www.steelmax.com.au](http://www.steelmax.com.au) or [www.steelfloorsaustralia.com.au](http://www.steelfloorsaustralia.com.au)

A layout diagram is supplied showing the suggested floor design, indicating the type of framing included, as well as the positions and placement of the members and material included at quote stage. Full working construction drawings and optional job certification is provided once the job is ordered, specific to each individual job. All Steel-MAX Building Systems (Steel-MAX) products used in this system have been certified for use and a copy of the letter of certification is available on the Steel-MAX website attached to the Channel Connection Details document. All Stramit® bearers and joists are designed individually for each project, using Stramit Technical Manuals. Optional engineer's "certificate of compliance" letter is supplied once the job is ordered. Alternatively, certification can be sought from an appropriately qualified engineer.

**NOTE:** The use of any non-approved or specified components, fittings, methods or products in the construction of this floor framing system will compromise the system's performance and structural integrity and expose the structure to possible defects, which will not be covered by Steel-MAX or Stramit Building Products (Stramit), or their suppliers' product warranties.

Modifications will also render the engineer's certification void. Therefore, only the Steel-MAX and Stramit® products specified with this floor system must be used, and only in accordance with all documentation supplied by Steel-MAX.



## ADVANTAGES

Quick design and quote

Individual design solutions

Engineer's certification

Readily available

Easy to install

Resists fire, rot, termites

### WHAT WE DO NOT PROVIDE

The system does not include footing or sub-floor bracing designs, hot rolled beams, bracing rods and nuts, sleeve anchors or corrosion protection paint.

Our design offer is strictly limited to the physical extent of the floor system components shown in the associated project drawings, e.g., from the stump bases to the tops of floor joists, unless noted otherwise.

The customer's own design engineer must provide footing and bracing designs for the job, to suit local site conditions and this channel floor framing system's grid loads, as any previous details for other floor systems may no longer apply.

### CONFIRMATION OF ACCURACY

If the complete project plan was not supplied, some details may have been assumed from the information provided and some dimensions may have been scaled from drawings supplied. Therefore, all information MUST be checked by the user for accuracy, prior to ordering and using the material, products and methods suggested.

### IMPORTANT NOTES

Stump and post tube quantities are estimates only. They are supplied in stock lengths for cutting on site by the builder.

All nominated dimensions and cutting lengths shown on the documentation are provided on the condition that clear, complete and accurate frame dimensions were provided. These dimensions and cutting lengths must be checked and approved by the customer prior to supply.

Where clear, complete and accurate frame dimensions are not provided, frame dimensions will be assumed from the information provided by the customer and members will be supplied in stock lengths of 200mm increments, rounded up for cutting on site by the builder.

Customers may specify cut lengths from site measurements if necessary.

### CERTIFICATION AND DESIGN CRITERIA

This suggested channel floor framing system uses the general building principles described in the Building Code of Australia. Refer to the BCA, as well as AS1684, AS2870 and NASH Standard Part 1 for general construction and installation procedures.

### UNLESS STATED OTHERWISE, THIS SUGGESTED FLOOR SYSTEM HAS BEEN DESIGNED TO SUIT:

A domestic "platform floor" with evenly distributed loads, as described in the BCA,

AS1684, NASH Standard Part 1, and the Steel-MAX Channel Connection Guide, supporting a trussed roof to external walls only, with no special point or concentrated loads, unless noted on the associated drawings.

Sheet flooring, such as proprietary particle board and plywood products used throughout the whole floor area under roof, with no step-downs allowed for wet areas or similar and no additional joists or blocking at wet area junctions to main floor areas.

Double joists below all external walls where walls run parallel with the joists. Open timber strip decking to verandahs and decks running in the long direction. Stumps to support perimeter deck bearers with posts above by others, unless roof or rail height posts are shown on the details.

Where posts to roof or rail height are included, the outer bearers will run continuously past the outer face of the posts. This will increase the deck size accordingly.

All joists spaced at 450mm centres to main floors and decks. All stumps supporting free-standing floors are assumed to be cast into footings 450mm to provide cantilevered bracing.

All stumps supporting enclosed floors are fixed to the tops of footings where the enclosing structure provides all necessary sub-floor bracing, such as full masonry, masonry veneer, or masonry based structures.

Engaged masonry piers at 2.0m maximum centres are assumed and allowed for the support of perimeter bearers to full masonry, masonry veneer, or masonry based structures, with all intermediate bearer support provided by Steel-MAX stumps.

Bearers must have a minimum of 200mm bearing along the bearer and 100mm minimum bearing at the end. Web stiffeners will be provided for bearers where direct bearing occurs.

Class "M" soil type and wind category "N3".

All "C" channel bearers and joists are designed individually for each project, using Stramit Technical Manuals. An optional certificate of compliance letter is provided by Steel-MAX once the complete floor system is ordered from Stramit.

All Steel-MAX products used in this system have been certified for use and a copy of the letter of certification is available on the Steel-MAX website [www.steelmax.com.au](http://www.steelmax.com.au)



## FEATURES

Pre-cut channel bearers and joists

Fast installation

Large spans

Adjustable stumps

DIY friendly

This floor framing system is very adaptable and there are often many layout solutions available for most floors.

The solution offered may NOT be the same as the original sub-floor design, or any other floor system design, and it may be altered if required to suit specific requirements.

The quotation is based on THIS sub-floor layout and NOT any previous, existing or other design.

**NOTE:** Design solutions are offered as a suggestion, based on the information supplied and the known site conditions, for the consideration of the customer and the project engineer.

It is imperative that the customer's project engineer checks the suggested details and either incorporates them into the whole job's structural design or requests alterations to suit.

It is always possible that there could be an influencing element within the structure that could affect and alter the design.

### SAFETY WARNING

This floor framing system has been designed for domestic loads and use only. It is not suitable for commercial use, unless specifically noted on the quotation drawings and certified fit for use by an engineer.

### DECKS AND EXPOSED FLOOR FRAMING

Steel-MAX and Stramit recommend that exposed steel deck framing panels are installed separate from main floor framing, but mechanically connected to the main floor frame with screws and/or bolts, and rubberised protection paint should be used between abutting members to help prevent the transfer of corrosive elements.

Adequate protection must be provided to all exposed steel framing, in accordance with the information provided on the Steel-MAX website.

Refer to the Steel-MAX "Extra Information" document for corrosion precaution notes.

Tops of deck joists should be painted with Wattle PermaChlor® PR 30 or equivalent, to protect the galvanised joists, prior to fixing decking, but the paint for this purpose is NOT included in this quote.

Exposed decks and certain floors that are subjected to corrosive elements must be adequately protected from corrosion.

Steel-MAX recommends painting all members with Wattle PermaChlor® PR 30 or equivalent, where exposed to corrosive elements.

Stramit® members manufactured from ZAM® coated steel may also be used in certain applications to minimise the effects of corrosion on the structural steel members.

Non-seasoned timber and similar unstable products are not recommended to be fixed to steel members in exposed conditions, because of the possible incidence of metal fatigue to hardened steel fixings caused by the continual expansion and contraction of these products in relation to the more stable and inert steel sections.

### HINTS

(Refer also to the "Channel Floor Connection Guide" and the "Extra Information" PDF files on the Steel-MAX website [www.steelmax.com.au](http://www.steelmax.com.au))

Generally, when setting out the stump grid for a clad design, locate the centres of all 75mm perimeter stumps 42mm from the outer wall frame, to allow for the 84mm stump cap, then divide the main areas equally or as shown in the associated construction details.

All dimensions should be confirmed by the user, on site, prior to ordering channel, stump tube and other sections from the supplier.

Use good building practice and ensure that all connections are structurally sound.

Permanent sub-floor bracing must be designed in conjunction with footings and installed prior to constructing the superstructure or loading the floor framing area.

Some stumps and posts may need to be reinforced or replaced with heavier sections, if side impact loads are expected from vehicles or similar sources. This requires special design by others, and is not included.

Additional support should be provided directly below heavy live and furniture floor loads such as pool tables, fireplaces, spas, etc., which may not be included in this sub-floor design.

Additional support may be required below load points from the superstructure (yet to be determined by others) such as upper floor framing by others, roof beams and girder trusses and other point loads not included in this detail.

## APPLICATIONS

Residential  
Light commercial  
Extensions  
Verandahs  
Decks  
Mezzanines

### DISCLAIMER

While every care is taken in the preparation of the information provided, neither Steel-MAX nor Stramit accepts any liability for loss or damage resulting from the use of that information.

To the fullest extent permitted by law, Steel-MAX and Stramit expressly disclaim all and any liability to any person or corporate entity in respect of anything done, provided or omitted and the consequences of anything done, provided or omitted, by any such person or corporation in reliance, whether in whole or in part upon the whole or any part of the information provided by Steel-MAX and Stramit.

Steel-MAX and Stramit offer this structure review plan and associated information, which has been prepared from information supplied to Steel-MAX or Stramit at the time of review.

Steel-MAX and Stramit may not be fully aware of the structurally specific and/or site specific matters affecting the design of the structure for which this plan has been prepared, other than those matters, if any, that have been specifically drawn to Steel-MAX's or Stramit's attention.

Steel-MAX and Stramit cannot accept any responsibility for the accuracy of the information, including, without limitation, designs, supplied to Steel-MAX or Stramit and on which this plan and information is based.

These floor framing details are prepared and provided to Steel-MAX's and Stramit's customers for their sole use and benefit only.

All information enclosed and contained within associated documents relating to this job represents a suggested method of using Steel-MAX and Stramit® products and associated components to construct a floor frame for this job only and may not suit a different application or project.

This submission is based on our interpretation of the details of the project and is contingent on the quality and quantity of the customer's job information provided at the time of quotation.

Therefore, all details are provided in good faith to be approved by the customer and all interested parties prior to use. Any anomalies or variations should be reported to Steel-MAX or Stramit for rectification and amendment prior to using the components, material and methods suggested.

The associated drawing(s) should not be considered a working drawing until approved by all interested parties and the appropriate statutory authorities.

**NOTE:** The information contained in this document was current at April 2012 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.

Approved by: \_\_\_\_\_

System Supplier: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**Steel-MAX**  
Building Systems

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