

# Posi-Joist™ Installation Guide

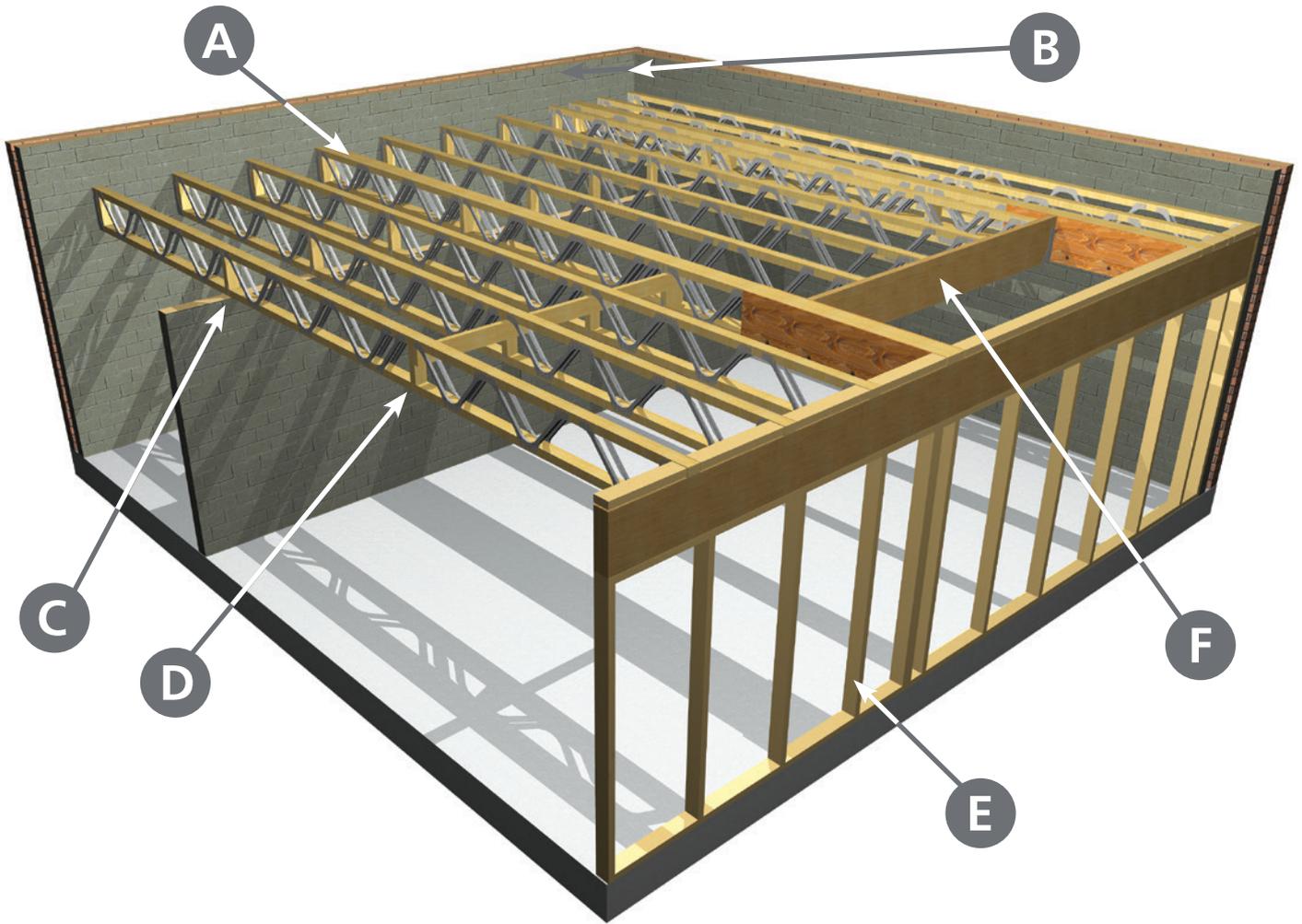
A guide for storage, handling and installation  
of the MiTek Posi-Joist™ floor system



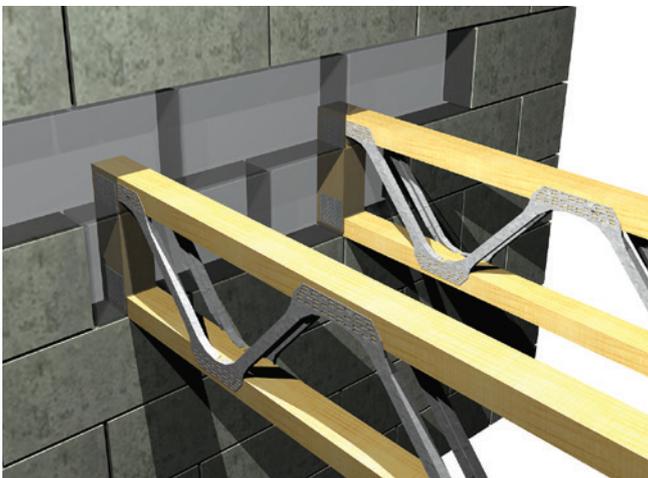
Shaping the Future of Timber Engineering



# Posi-Joist™ Installation Details

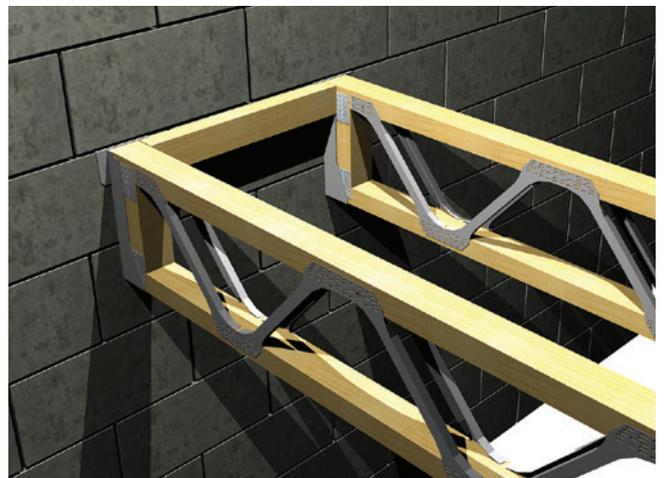


## A Masonry Wall Connection Details



Blockwork to continue between joists to provide restraint.

Note: This is not allowed on solid external walls.

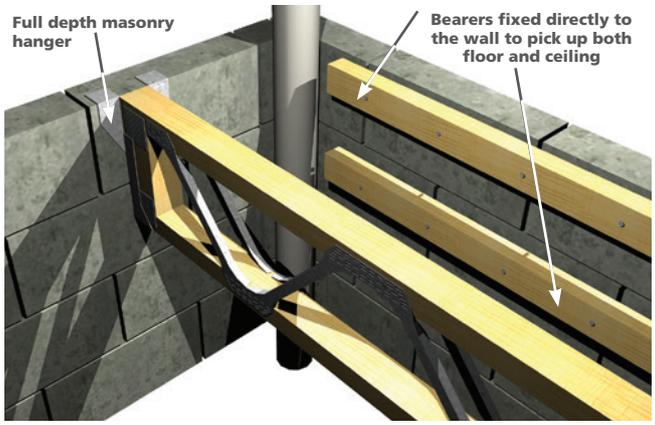


Top Chord restraint fixed between joists. Minimum bearing determined by design.

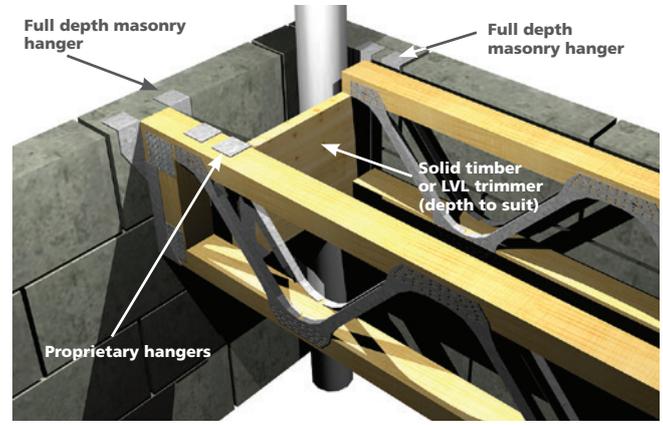
(Choose correct full depth hanger relative to coursework, load, bearing width and level).



## B Soil Pipe Corner Details

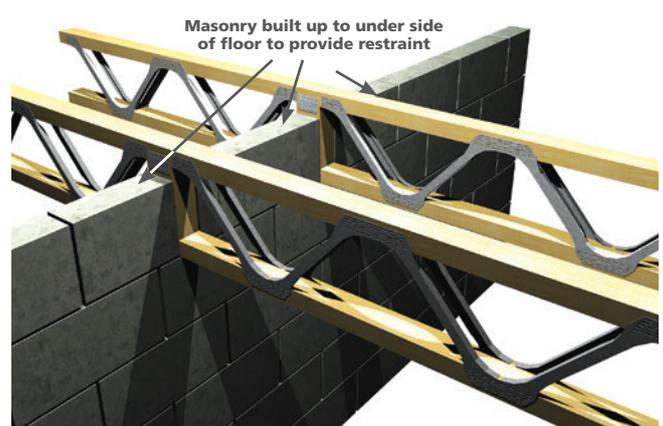
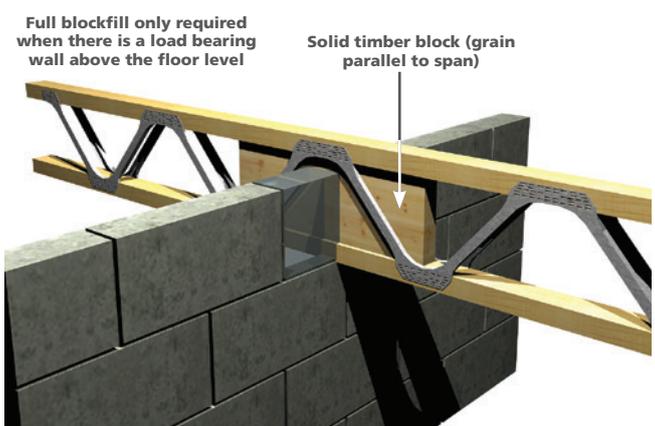


Top chord restraint omitted for clarity.



This may not perform well acoustically as sound will be transmitted directly from the floor to the bearer through the inner leaf of the wall.

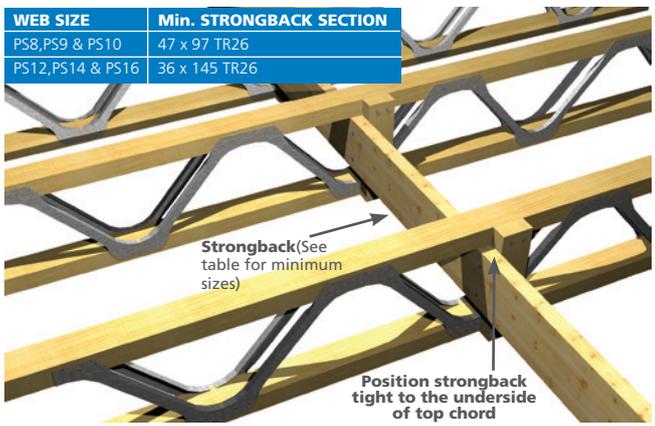
## C Internal Bearing Details



Note: This is not allowed on external walls or fire walls.

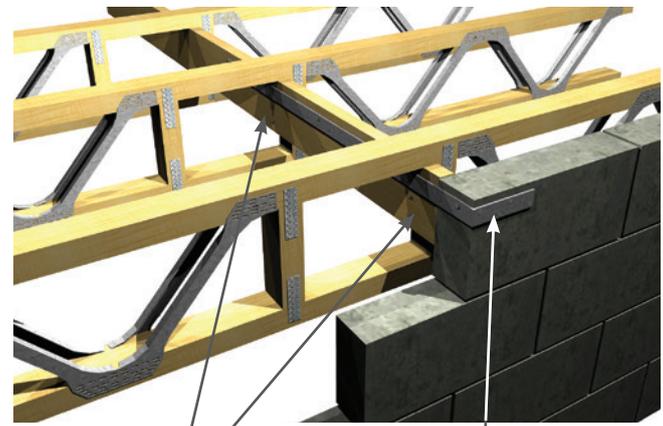
## D Strongback Bracing Details

WEB SIZE	Min. STRONGBACK SECTION
PS8, PS9 & PS10	47 x 97 TR26
PS12, PS14 & PS16	36 x 145 TR26



38x75mm (min) blocks twice nailed to top and bottom members and twice nailed to brace using 3.1x75mm long galvanised wire nails.

**Insert strongback through joists before fixing joists, it may not be possible after joists have been fixed.**

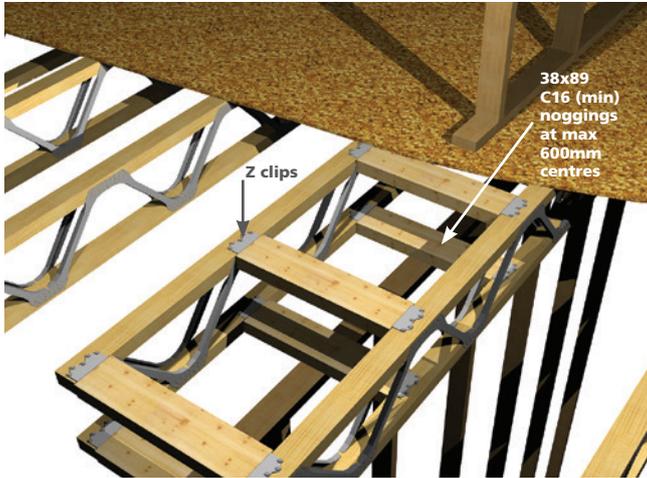


Strongback twice nailed to brace using 3.1x75mm long galvanised wire nails

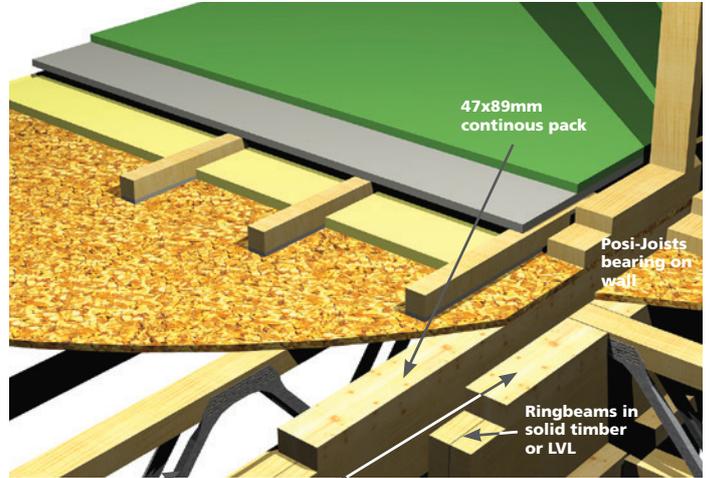
Strap fixed along top edge of strongback with a minimum of four fixings of which at least one is to be over the third joist

Note: Minimum recommended strongback sizes are given above which may be different when floor is designed to EC5 vibration check, see Posi-Joist calculations.

## E Timber Frame Details

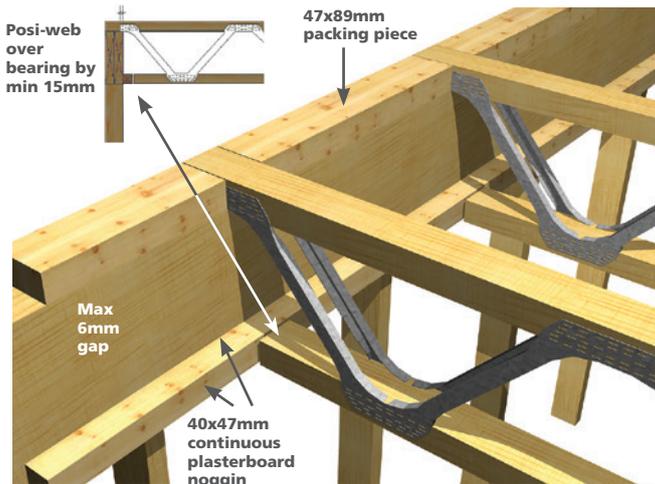


Non-load bearing partitions parallel to Posi-Joist™



First Posi-beam set back approx 200mm from wall

47x89mm packs between joists



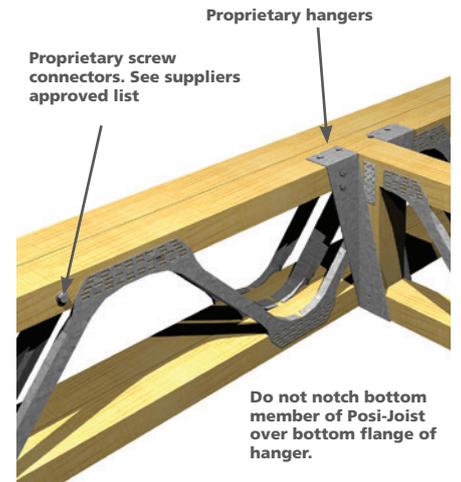
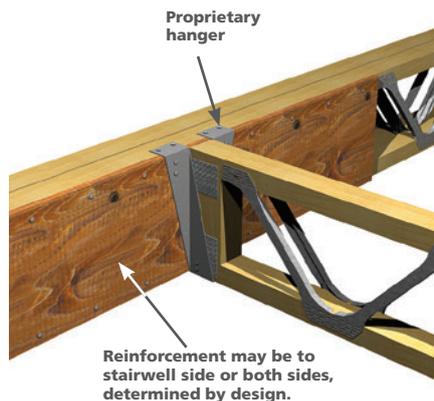
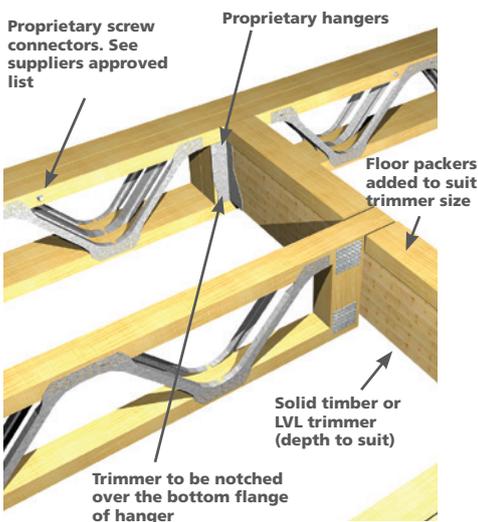
### Timber frame separating floor E-FT-3 (Refer to robust detail)

**Floor comprising:** A minimum 253mm deep Posi-Joist™ with 18mm T&G flooring on 19mm gypsum based board (nom 13.5Kg/m<sup>2</sup>) onto FFT1-Resilient composite batten system minimum 70mm deep with 25mm insulation (10-36Kg/m<sup>3</sup>) laid between and all on a 18mm T&G sub-deck. 100mm insulation quilt (10-36Kg/m<sup>3</sup>) is laid between the joists.

**Ceiling treatment CT2™ (not shown) comprising:** 2 Layers of 15mm gypsum based board (nom 11.7Kg/m<sup>2</sup>) onto resilient bars at 400mm centres. The first layer of board is fixed with 25mm screws and the second layer of board is fixed with 42mm screws staggered with the first board. The second layer is laid in echelon pattern with staggered joints.

**Note:** Ceiling board fixings must not penetrate or touch joists.

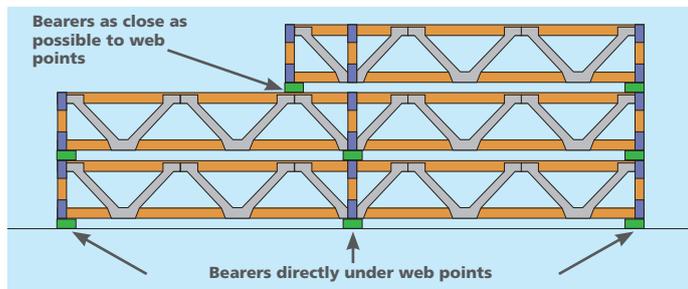
## F Stairwell Details



# Posi-Joist™ Site Handling and Storage

Storage on site should be for a limited period of time prior to erection of the Posi-Joists.™

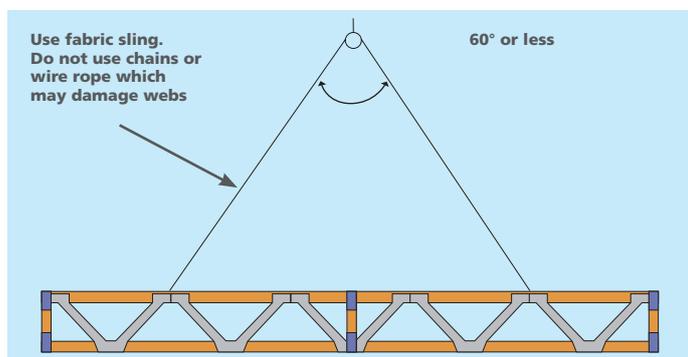
Posi-Joists™ should either be stored vertically or on the flat. If stored vertically there should be intermediate bearers at node points not within the bay of a joist, as shown below. If stored in a flat position, sufficient bearings should be provided to prevent excessive lateral bending.



It is recommended that completed Posi-Joists™ be strapped together and wrapped in a waterproof protective covering to protect them from short term exposure to inclement weather.

Special precautions should be taken when stacking top chord supported floor cassettes to prevent the stack lozenging in storage. Additional bracing to the ends of the stack should be fixed to stop lateral movement. Care should be taken when handling the Posi-Joists™ to avoid bending, twisting or dropping.

When loading/offloading with a crane, slings should always be attached to the timber chords or the cassette lifting points, and not to the metal webs to avoid buckling. Slings should be attached at panel points closest to the quarter points of the Posi-Joists™ as shown below.

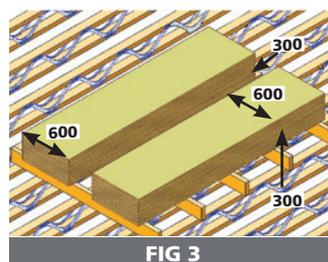
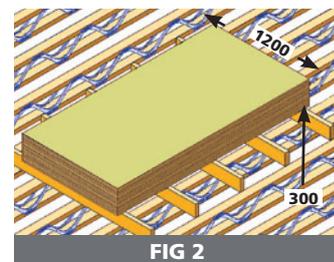
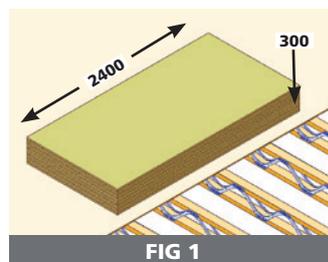


## Set Out & Placement

Posi-Joists™ are generally placed perpendicular to the load bearing supporting walls and should be located so that the distance between them does not exceed the design spacing – always consult the Posi-Joist™ layout drawing and proceed with erection of the floors as follows:-

- 1 Plan the erection sequence and place the Posi-Joists™ close to where they are required, only distribute a sufficient number of joists around the building which can be erected in a reasonable period of time. Posi-Joists™ should be protected from inclement weather and stored as noted above.
- 2 Before lifting the Posi-Joists™ to scaffold level do make sure the correct end of the joist is at the appropriate support as the end details may be different. Also be aware of any internal supports which are being used and that the special internal bearing detail for the joist is in the correct position.
- 3 If the Posi-Joists™ are supported over more than 2 supports make sure all the supports are the same level and when the joists are lifted into place they rest on all of the supports.
- 4 If the Posi-Joists™ are supported on masonry hangers, make sure they are the ones specified and are firmly anchored in place. Joists should have a full bearing with no more than a 5mm gap between the end of the joist and the face of the hanger. Masonry hangers with a cavity return and integral strap provide lateral restraint to wall heads.
- 5 Make sure the Posi-Joists™ are erected the correct way around, the joists will normally be marked "TOP" and the first metal web will normally start at the top of the Posi-Joists™.

- 6 The Posi-Joists™ are positioned to coincide with the deck joints, the first of which is normally 1210mm away from the wall face in masonry construction or 1200mm from the cavity face in Timber Frame construction when the deck extends to the cavity face; when the joists are spaced at 400 or 600mm centres. There is normally a 10mm perimeter gap between the face of the deck and the face of the wall in masonry construction to allow for potential expansion of the deck. The board material is normally 1200 x 2400mm, the long dimension spanning at 90° to the joist span. The remaining joists are normally spaced on a grid of 400, or 600mm centres, on occasion at 480mm centres.
- 7 When the deck is set out from the face of the wall it is normal to have the first joist edge 50mm from the face of the wall where in Timber Frame construction with the deck set out from the cavity face it is normal to not have a joist close to the wall, the deck and plasterboard being supported on a timber ledger nailed to the frame. Carefully follow the layout drawing and the wall/joist interface details provided by the Building Designer, in particular in Timber Frame where the joist centres and the stud centres may have to line through.
- 8 The penultimate Posi-Joist™ in the run is set out on the standard module and the last joist is positioned similar to the first in the run.
- 9 Posi-Joist™ stair trimmer joists and trimmers will be required around stair openings which may be on the main joist grid or usually off the grid. Set these joists out strictly in accordance with the architectural and Posi-Joist™ layout drawing and fix the trimmer joist to the stair trimmer and the trimmed joists to the trimmer joist with the metal hangers specified making sure that any 2 ply joists are adequately connected together as detailed.
- 10 To temporary brace and space the Posi-Joists™ which have been laid in position fix a piece of 22 x 97 bracing to the top of the joists at their ends and mid span or around 2.4m centres on spans longer than 4.8m.
- 11 Install the strongback bracing as detailed, the strongback is always installed on edge not on flat and must be fixed to the integral strongback blocks or nogging pieces nailed to the face of the joist. Due to the width of the Posi-Joist™ chords and the additional stiffness installed in the floor due to the strongback bracing, it will not normally be necessary to employ any temporary diagonal bracing.
- 12 When all the Posi-Joists™ have been positioned and fixed in place, the partition noggings, perimeter noggings, rim boards, when required can be installed, and in the case of masonry construction the steel lateral restraint straps should be fixed in place at no greater than 2m centres and should extend over 3 joists.
- 13 The floor carcass is now ready now to receive the decking material and acoustic material where required.
- 14 The maximum load of sheet materials temporary stored on the Posi-Joists™ is 250kg/m<sup>2</sup> and should not be greater than 300mm deep. This equates to 16 sheets of 18mm chipboard, 13 sheets of 22mm chipboard or 20 sheets of 15mm plasterboard. Where the sheets are stacked by hand they should span lengthways across the joists, (Fig 1), when lifted mechanically they should be seated on 5 bearers the width of which are 600mm longer than the width of the board. (Figs 2 & 3).



# Posi-Joist™ Temporary Bracing

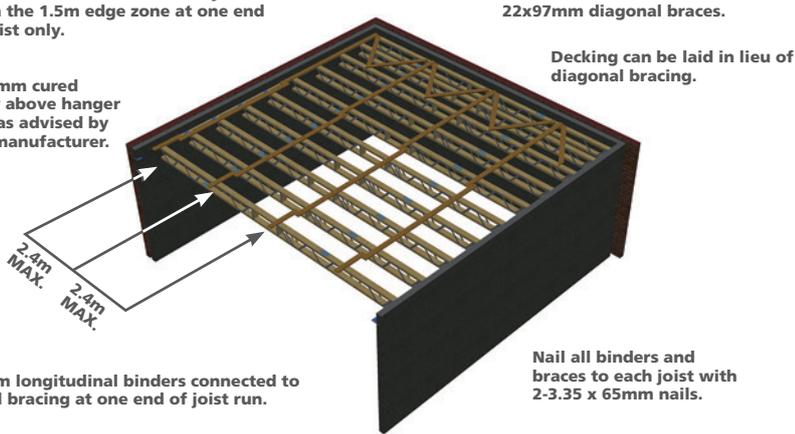
This does not apply to top hung Posi-Joists™ in timber frame construction which do not require temporary bracing (See Section E).

## Temporary Erection Bracing Notes

The builder is responsible for identifying and minimising the risks involved in erecting Posi-Joists™ to ensure that the health and safety of all workers is maintained. Builders should be aware of the health and safety responsibilities imposed on them by the Construction (Design and Management) Regulations 1994. Proper erection procedures and bracing are vital to the safe construction of Posi-Joist™ floors. The following notes may assist builders in preparing a safety assessment.

Construction materials should only be stored in the 1.5m edge zone at one end of the joist only.

Min 675mm cured masonry above hanger level or as advised by hanger manufacturer.



22x97mm longitudinal binders connected to diagonal bracing at one end of joist run.

- 1 Un-braced Posi-Joists™ may be unstable.
- 2 Do not allow anyone to walk on un-braced Posi-Joists™.
- 3 Do not store building materials on un-braced Posi-Joists™.
- 4 Posi-Joists™ should be erected straight and vertical. The maximum deviation from horizontal should not exceed 10mm and the maximum deviation from vertical should not exceed 2mm.
- 5 Temporary bracing comprises diagonal bracing, longitudinal binders and permanent strong-backs.
- 6 All longitudinal binders, diagonal braces, strong-backs and hangers should be completely installed and fully nailed as detailed.
- 7 Lateral strength should be provided by a diagonally braced system across at least 3 Posi-Joists™ as shown in the Erection Bracing diagram. Additional braced and blocked systems should be added at 12m spacing in long joist runs.
- 8 Temporary bracing may be progressively removed as decking is fixed.

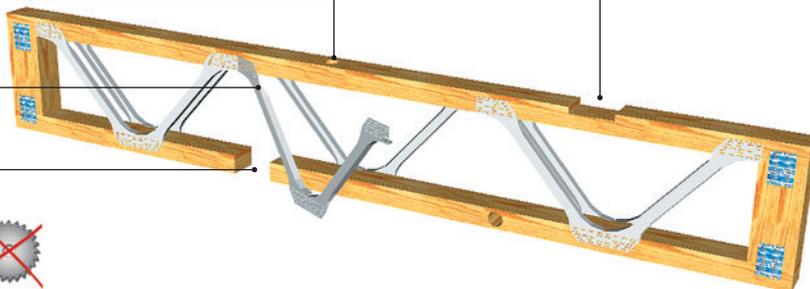
## Do's and Don'ts

**DON'T** Drill holes in the timber chords

**DON'T** Cut notches in the timber

**DON'T** Cut or remove the metal webs

**DON'T** Cut through the timber chords



- DO** Store as shown in handling & storage section
- DO** Lift the joists in a vertical position
- DO** Protect joists from inclement weather
- DO** Use the open web feature for services

Authorised Posi-Joist™ Manufacturer



Shaping the Future of Timber Engineering

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