

3.5.3 HIBOND INSTALLATION

Propping

- Temporary propping must be placed in position prior to placement of the Hibond sheet to provide a safe and solid working platform during the construction phase. Section 3.3.4.1 Hibond Formwork Tables gives the maximum spans for different slab thicknesses and span conditions. As a practical maximum, propping lines should be placed not more than 2.0m apart (for up to 180mm overall slab thickness).
- Bearers and props must consist of either Machine Stress Graded MSG8 timber for load-bearing situations or structural steel sections sized for the construction loads (refer Section 3.3.4.2 Propping) by the design engineer.
- A continuous 100mm x 50mm strap fixed to the studs at mid-height attached at one end to a permanent wall is required to avoid buckling of the studs during the concrete pour.
- Propping lines must have a solid foundation and be cross braced or held in position by nailing through the Hibond sheet into the bearer.
- Bearers used must be a minimum dimension of 100mm x 100mm (2 - 100mm x 50mm on edge nailed together), fully supporting all Hibond sheets.
- Vertical propping varies depending on the slab thickness and maximum height of the propping system.

Slab thicknesses up to 180mm

- Up to 2.4m maximum height use 100mm x 50mm vertical props at 600mm centres.
- From 2.4m to 2.7m maximum height use 100mm x 50mm vertical props at 450mm centres.
- From 2.7m to 3.0m maximum height use 100mm x 100mm (2 - 100mm x 50mm nailed together) at 600mm centres.

Slab thicknesses from 180mm to 300mm

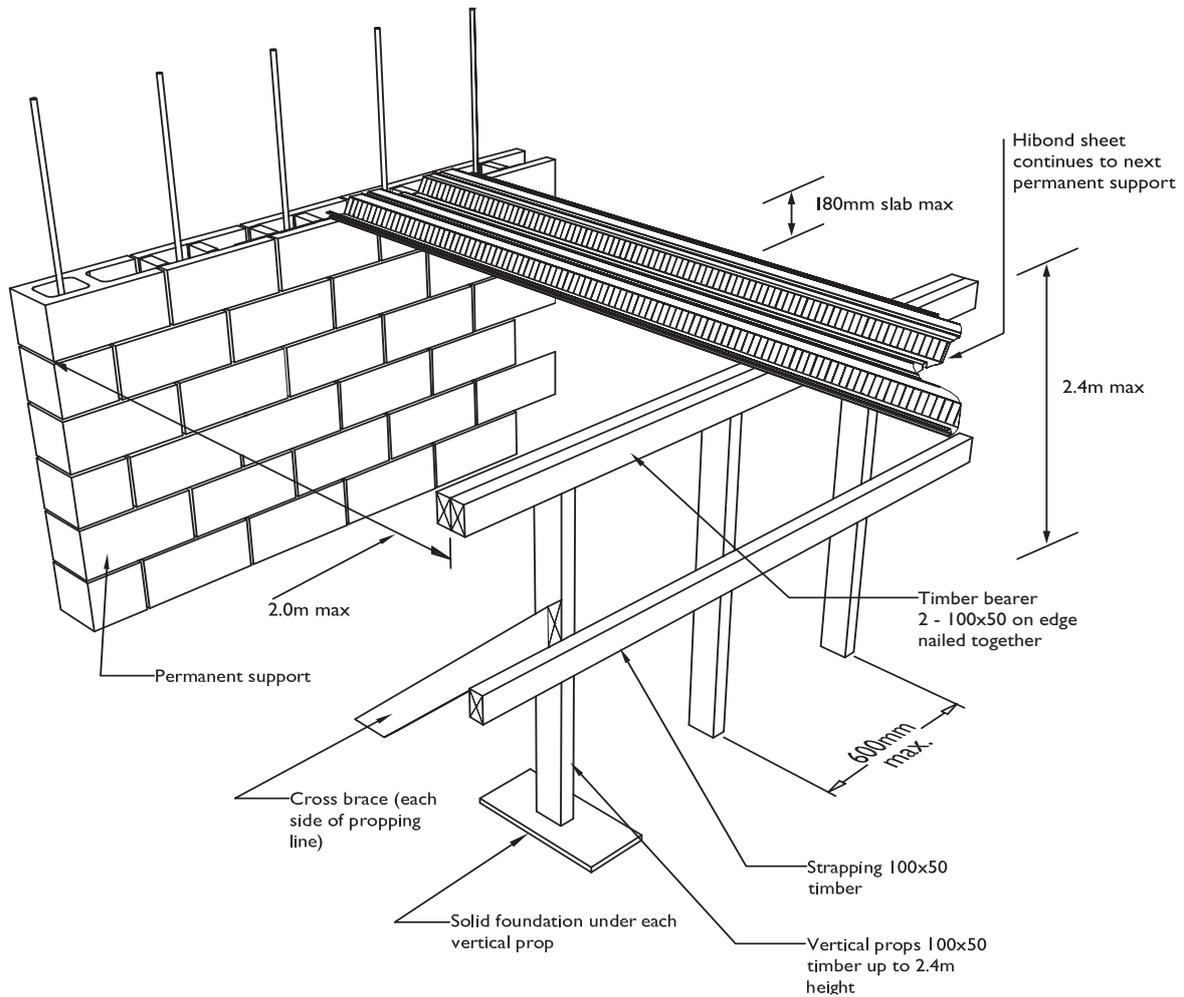
- Up to 2.7m maximum height use 100mm x 50mm vertical props at 450mm centres.
- From 2.7m to 3.0m maximum height use 100mm x 100mm (2 - 100mm x 50mm nailed together) at 600mm centres.

All other slab thicknesses and propping systems require specific design by the design engineer.

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3.5.3 HIBOND INSTALLATION *continued*

- If cutting of the Hibond sheet is required when forming penetrations, temporary propping is required around the opening to maintain the integrity of the sheet during the concrete pour. The area of Hibond removed for penetrations must be replaced by an equivalent strength of reinforcing to the design engineer's specification.
- Penetrations greater than 250mm x 250mm require specific design by the design engineer.



Note: The diagram above is representative of a propping system with propping lines placed not more than 2.0m apart, for a Hibond slab up to 180mm overall thickness with a maximum propping height of 2.4m.

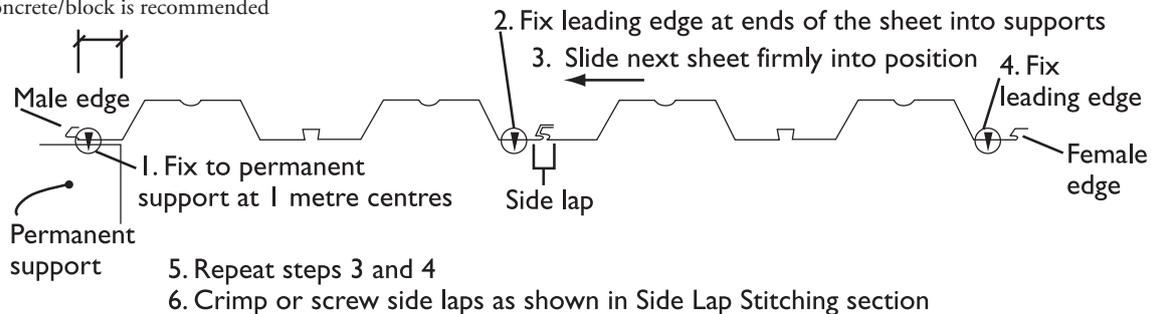
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3.5.3 HIBOND INSTALLATION *continued*

Laying

- Hibond sheets must be laid in one continuous length between permanent supports. Short sheets of Hibond must never be spliced together to achieve the span between temporary or permanent supports.
- Hibond end caps are fitted at sheet ends to avoid concrete leakage. Fit the end caps after the Hibond sheets have been laid and fixed in place. Self-drilling screws are used to secure end caps in position via a pre-punched locating hole.
- The minimum Hibond sheet bearing (or seating) onto permanent structure is 30mm. However for steel beams 50mm minimum bearing is recommended, and for concrete/block 80mm minimum bearing is recommended.
- Align the first Hibond sheet with the male edge of the side lap sitting on the permanent support. This will ensure the side laps fit correctly together. Apply hold down fixings and lay Hibond sheets in the sequence shown.

50mm min seating for steel beams and 80mm min seating for concrete/block is recommended



Note: Where the Hibond sheet is continuous over multiple steel beams consideration should be given to additional fixings to avoid issues due to wind uplift. Care should be taken with location of fixings to ensure these do not clash with shear stud locations.

- Where supports are steel beams, shear connectors are welded through the Hibond sheets onto the steel beam beneath. Where this is required the top flange of the beam must be unpainted or have the paint stripped clean. Where shear connectors are pre-welded to beams, these must be located in line with the bottom pan of the Hibond sheet (305mm centre to centre) in order to gain the required shear capacity.
- Where fixing into solid filled concrete block (especially when using powder actuated drive pins), edge breakout of the block can be avoided by increasing the Hibond sheet bearing (or seating) and fixing into the grout.
- Where tilt slab construction is being used, the Hibond sheets are fixed to a steel angle bolted onto the tilt slab (minimum 50mm seating leg).
- When laying over timber supports, the Hibond sheet must be separated from the timber using Malthoid (DPC) or similar. Galvanised nails must be used to hold down Hibond sheets during installation. Permanent shear connectors require specific design by the engineer.

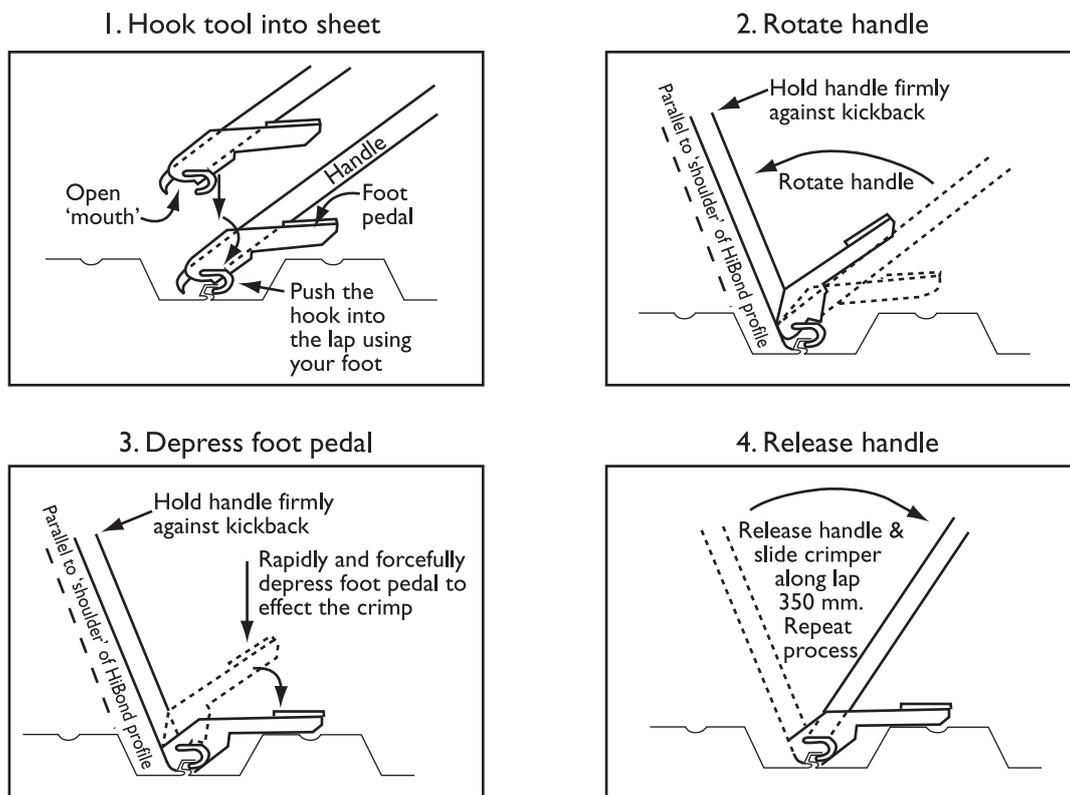
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3.5.3 HIBOND INSTALLATION *continued*

- Periodic checks should be made on large runs to ensure the sheets are parallel and true to the first sheet. Stretching of the Hibond sheet to increase coverage must be avoided.
- Where on-site cutting of the Hibond sheet is necessary, use a metal-cutting power saw or angle grinder. After cutting, all swarf or metal filings must be cleaned off the sheet surface (recommended at the end of each day's work) to avoid corrosion.
- For indicative Hibond CAD details refer to Section 3.3.14.

Side Lap Stitching

- Self-drilling screws are the preferred method for side lap stitching of Hibond sheets. As a practical guide, use 10g - 16 x 16mm self-drilling screws at maximum of 600mm centres.
- As an alternative Hibond sheet side laps can be crimped together at a maximum of 350mm centres along the full lap length, using the specialised crimping tool. Call your local representative on 0800 DIMOND (346 663) to arrange a crimping tool.
- Crimping is carried out using the following method:



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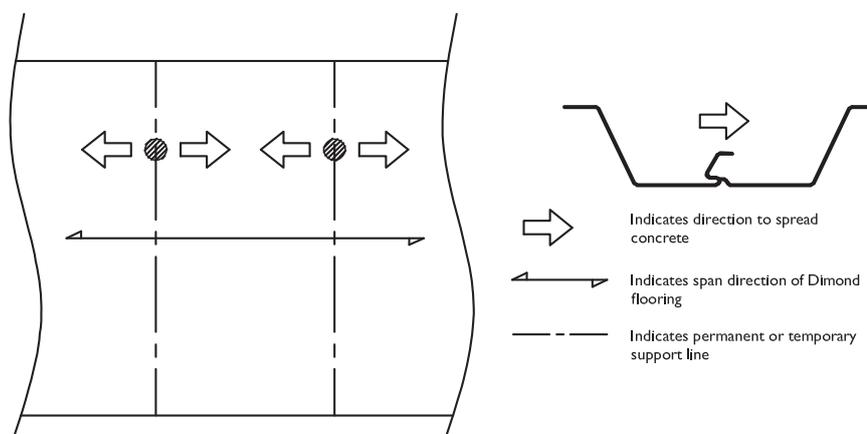
3.5.3 HIBOND INSTALLATION *continued*

Other Considerations

- Where required, Edge Form and Closure Strip (rake edge flashing) are used to contain concrete during the pour. Refer to Section 3.3.13 Hibond Components for details.
- Mesh and/or additional reinforcing must be placed in accordance with the design engineer's specifications to ensure minimum top cover. Refer to Section 3.3.2 Design Considerations: Additional Reinforcement. The reinforcing mesh shall be orientated so the top bar runs in the same direction as the steel sheet.
- Consideration should be given to laying planks as walkways to minimise localised loading of the Hibond sheet by foot traffic or equipment.

Concrete Placement

- Avoid dumping of wet concrete in a heap and when using a concrete pump, ensure the height of the discharge nozzle is not more than 300mm above the top of the Hibond sheet. This will avoid overloading of the Hibond sheet causing buckling and/or opening of the side laps.
- Begin the pour over a beam or propping line (shown as  in the diagram below) to minimise deflections. Spread the wet concrete away from the beams and into the span. Work wet concrete across the Hibond sheet towards the underlapping sheet to keep the side laps tightly closed, as illustrated.
- It is recommended that concrete placers do not crowd together during the pouring sequence, but maintain a one square metre "zone" to avoid overloading the Hibond sheet.



- The use of a concrete vibrator will help eliminate air voids and ensure full contact between the Hibond sheet and the concrete.
- Where the Hibond sheet underside is visible, concrete leakage on the underside must be washed off once concrete placement is complete and before the concrete slurry dries off.
- Temporary propping and formwork should not be removed until the concrete strength has reached 20 MPa, or if this can not be established, 28 days full cure.