



This checklist covers the installation of structural timber flooring that is to be installed in accordance with the installation instructions, refer to <http://coffshardwoods.com.au/product/flooring>. Installation is to be undertaken by competent timber floor installers.

### PRODUCTS COVERED

60 x 19mm, 80 x 19mm, 130 x 19mm, 180 x 20.5mm and 60 x 20.5mm (Sports flooring)

### PRIOR TO INSTALLATION

- **Transport and storage practices** - Ensure these have not adversely affected board moisture content. Floorboard widths and moisture contents should be checked for a sample of boards from each pack supplied, and results recorded.
- **Locality and specific building site** - Consider where the flooring is to be laid and the expected floor movement (shrinkage and swelling) after installation. Floor expansion allowance needs to be provided to the perimeter of the floor, with additional intermediate allowance in wider floors (> 6m) and in locations that experience periods of more consistent higher humidity.
- **Subfloor and subfloor space** (as applicable) - Ensure that the subfloor and subfloor space is suitable for accepting the timber floor. When fixing into the subfloor, it needs to be adequately flat and dry, and with adhesive use, both clean and sound. This includes the integrity of strip timber subfloors and also particleboard where protective wax in the surface is to be removed. Possible movement in timber (and sheet) subfloors can telegraph to floor above and if considered a risk a thin plywood underlay should be considered. Floors elevated above natural ground must be adequately ventilated and not subject to damp or wet soil that would maintain high humidity beneath the floor.
- **State of building completion** - The building must be complete to the stage of being closed in, weathertight and the flooring protected from adverse effects from wet trades and more extreme direct sunlight etc. Floor protection and temporary window coverings may be needed after laying. Maintain internal conditions as close as possible to lived-in conditions and note that prolonged high temperatures in locked up buildings can adversely affect floors.
- **Acclimatisation** - For moderate internal climates acclimatisation is generally not needed. Acclimatisation can however be undertaken in the installation environment, where boards are to be stacked to permit airflow through each layer. The process can be used to raise the average flooring moisture content (and cover width) with humid sites, or to reduce the average moisture content (and cover width) with dry sites. Incorrect acclimatisation can have a detrimental effect. Additional care is needed with 180mm wide boards due to preferential end swelling or shrinkage.

### FIXING ALTERNATIVES FOR DIFFERENT BOARD SIZES AND SUBFLOOR TYPES

Board sizes	Direct to joists	Sheet subfloor on joists	Battens on concrete	Plywood on concrete
60 x 19mm	Secret fix or face fix	Secret fix or face fix through to joists	Secret fix or face fix	Secret fix
80 x 19mm	Secret fix or face fix	Secret fix or face fix through to joists	Secret fix or face fix	Secret fix
130 x 19mm	Face fix only	Secret fix (full bed of adhesive only) or face fix through to joists	Face fix only	Secret fix (full bed of adhesive only)
180 x 20.5mm	Face fix only	Face fix through to joists	Face fix (70x35mm battens only)	Not recommended
60 x 20.5mm	To sports floor specifications			

### SUBFLOOR REQUIREMENTS AND FIXING PRACTICES

- **Concrete slab moisture and moisture vapour barrier** - Slab moisture when assessed by impedance meter is to be below 4% prior to installing a 0.2mm polyethylene moisture vapour barrier, lapped 200mm, joints taped with water resistant plastic tape, and edges brought to the height of the floor. Alternatively, an applied moisture vapour barrier may be provided in accordance with the manufacturer's instructions.
- **Joist and sheet subfloor moisture** - These subfloors need to be within 2 and 3 percent of the flooring being laid. Note that moisture meters have reduced accuracy in subfloor sheeting. Oven dry moisture content testing may be required.
- **Joist and sheet subfloor fixing** - In moderate to high humidity localities, when higher density flooring is installed, it is necessary to ensure that the subfloor and subfloor framing is adequately fixed, including sheet subfloors being screwed to joists. Inadequate fixing can lead to buckling of the sheet flooring or subfloor framing.
- **Subfloor flatness** - Concrete slabs receiving plywood or battens need to be flat to within 3mm under a 1.5m straight edge. Floors direct to joists or sheet flooring to joists should be sufficiently flat as to have no visibly obvious undulations.
- **Plywood subfloors on concrete slabs** - Plywood sheets are to be staggered 900mm and fixed with hand driven 50 mm long drive pins (e.g. Powers spikes, Ramset drive pins or other equivalent) to manufacturer's recommendations and not closer than 50mm to sheet edges. The pins are driven flush with the surface. For 15mm thick plywood, fix with 4 rows of 5 pins and for 12mm thick plywood, fix with 4 rows of 7 pins.
- **Batten subfloors on concrete slabs** - Seasoned high density 80x19mm battens may be fixed at 900mm spacing with hand driven spikes (drive pins) embedded at least 32mm or similar (e.g. M6 masonry anchors). Seasoned 70x35mm battens may be similarly fixed with spacing up to 1200mm. Note that in more humid locations or where higher forces are expected both batten spacing and/or fixing spacing should be reduced.
- **Expansion allowance** - A min. 10 mm expansion gap at all internal or external wall structures is to be provided, except where board ends abut doorways (where a 2mm gap to prevent rubbing can be provided (filled with flexible sealant (not silicone))). No intermediate expansion allowance is needed for floors up to 6m wide, if there is moderate in-service board movement. Over 6m or if extra expansion allowance is required, a 12mm wide cork intermediate expansion joint or a series of smaller gaps (1 - 2mm wide) can be provided at about 800 to 1000mm apart or combination of these methods.

## INSTALLATION TO RECOGNISED INDUSTRY STANDARDS AND PRACTICES

Floor installation is to follow recognised industry practice as outlined in Coffs Harbour Hardwood's installation instructions <http://coffshardwoods.com.au/product/flooring> and with further details as outlined in the ATFA Industry Standard – Solid Timber Flooring. Provided below are aspects relating to the fixing of structural flooring.

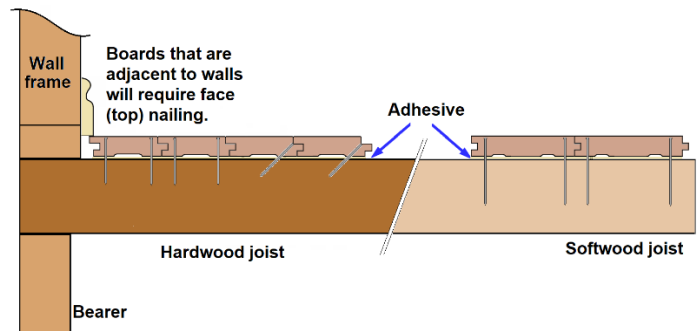
### DIRECT TO JOISTS

A 6 to 10mm bead of flooring adhesive (i.e. polyurethane or polymer) is to be applied to the joist.

**Face fix** with 50x2.2 or 50x2.5 T-head machine-driven or 50x2.8 hand-driven bullet head nails. Two nails at each joist crossing for boards up to 130mm wide and 3 nails for 180mm wide flooring.

**Secret fix 60x19mm and 80x19mm to hardwood joists** with 45x15 gauge staples or 45x16 gauge cleats.

**Secret fix 60x19mm and 80x19mm to softwood, LVL and I-Beam joists** with 50x15 gauge staples or 45x16 gauge cleats.

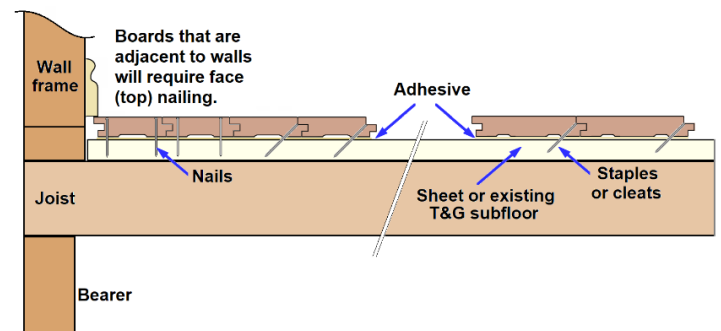


### OVER TIMBER AND SHEET SUBFLOORS ON JOISTS

**Secret fix and adhesive beads** with 35x15 gauge staples or 32x18 gauge cleats: spaced at 225mm and a 6-10mm zigzag bead of flooring adhesive (i.e. polyurethane or polymer) between fixing points OR spaced at 450mm and 6-10 mm bead of flooring adhesive, between and at fixing points.

**Secret fix 130x19mm with a full trowel adhesive bed** of flooring adhesive (i.e. polyurethane or polymer) applied to the adhesive manufacturer's instructions and with 35x15 gauge staples or 32x16 gauge cleats at 300mm centres.

**Face fix 130x19mm and 180x20.5mm** through to joists with 65x2.5mm long machine nails and beads of adhesive at and between fixing points.



### TO BATTENS ON CONCRETE

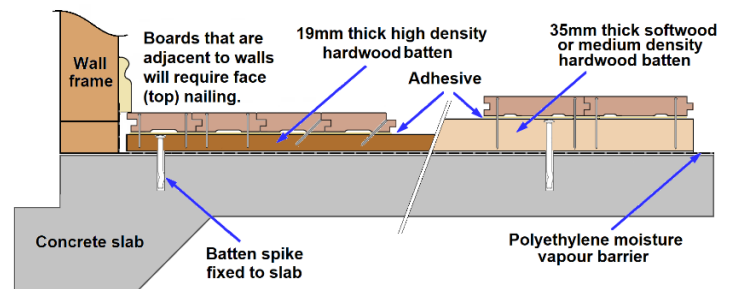
A 6 to 10mm zigzag bead of flooring adhesive (i.e. polyurethane or polymer) is to be applied to the batten.

**High density hardwood battens (80x19mm)**

- **Face fix 60x19mm, 80x19mm, 130x19mm** with 32x2.2 T-head machine-driven nails.
- **Secret fix 60x19mm & 80x19mm** with 38x15 gauge staples or 38x16 gauge cleats.

**Medium density hardwood and softwood battens (70x35mm)**

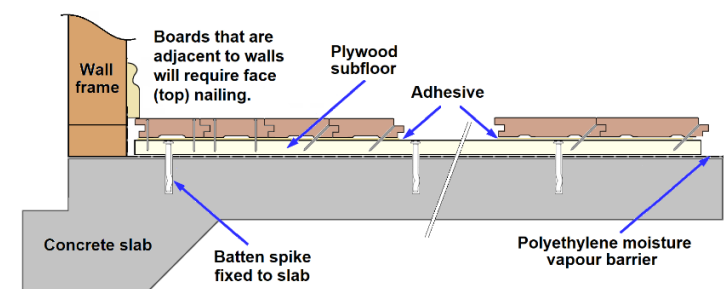
- **Face fix 130x19mm and 180x20.5mm** with 45x2.2 T-head machine-driven nail or 45x2.5 hand-driven bullet head nails.
- **Secret fix 60x19mm & 80x19mm** with 50x15 gauge staples or 50x16 gauge cleats.



### OVER PLYWOOD SUBFLOORS ON CONCRETE

**Secret fix 60x19mm and 80x19mm with beads of flooring adhesive** with 35x15 gauge staples or 32x18 gauge cleats: spaced at 225mm and with a 6 to 10mm zigzag adhesive bead between fixing points OR spaced at 450mm spacing and with a 6 to 10mm adhesive bead between and at fixing points.

**Secret fix 60x19mm, 80x19mm and 130 x19mm with a full trowel bed of adhesive** and 35x15 gauge staples or 32x16 gauge cleats at 300mm centers.



### SANDING AND COATING

Timber floor finishes include oils and hard wax oils, oil modified urethanes, solvent and water-based polyurethane. When choosing a floor finish it is necessary to consider aspects that include the following: wear and ongoing maintenance, the effects that different types of coatings can have (e.g. edge-bonding, tram lining, colour changes), the desired gloss level and health aspects during application. A finish similar to that of fine furniture should not be expected, as site sanded and coated floors are not finished in a factory environment and different pieces of flooring will sand differently. The home environment is also not dust free and subject to greater variations in temperature and humidity. However, the finished floor can be expected to be of a high standard and have an even appearance. A minimal level of contaminants, minor sanding marks and other minor imperfections may be visible. Some finishes will also 'yellow' with time and if rugs are moved, a contrast in the depth of colour can occur.