

# Installation recommendations



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QUALITY KILN DRIED TIMBER

## Application

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This recommendation covers the installation of **Hurford Hardwood Wideboard 130 x 14 mm and 180 x 14 mm overlay flooring**.

**Section 1** covers installation on plywood over a concrete slab.

**Section 2** covers installation to plywood or particleboard on joists.

**Section 3** discusses aspects of sanding and finishing.

**Section 4** looks at caring for the completed floor.

Note that these recommendations should be read in conjunction with the ATFA's flooring manual Timber Floors. Due to the wide cover widths these recommendations differ in some important areas from the ATFA manual & all differing aspects of these recommendations are considered important.

## Section 1: Installation to plywood over a concrete slab

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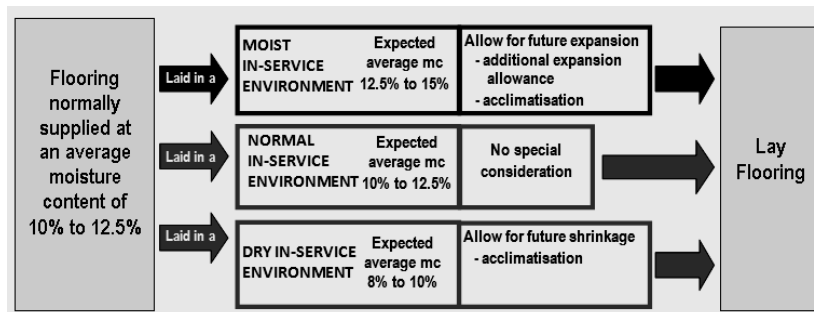
### 1.1 SLAB PREPARATION

- The concrete slab must be flat to the point where any gaps below a 1.5 m straight edge do not exceed 3 mm between two high points in the floor. Levelling compound may be used where this tolerance is exceeded.
- The slab (including any levelling compound) must be dry to the point where concrete moisture meter readings do not exceed 5.5% or the humidity within the slab does not exceed 75%. Tests to be carried out in accordance with equipment manufacturers instructions.

### 1.2 PRE-INSTALLATION

- The product has been provided with wrapping to top, sides and ends to minimise external influences. The protective wrap cannot be relied upon for protection from rain or other wetting. The product **must** remain out of the weather and intense sunlight during all phases of transport and storage. It should also not be stored where there are extremes in temperature and humidity such as an uninsulated metal garage or moist basement.
- The site environment needs to be assessed as do the expected internal conditions after the floor has been installed. In high humidity environments natural swelling can be expected after installation and in dry climates shrinkage generally occurs. The effects of heating and cooling appliances must also be considered and particularly so if not in use when the floor is installed. The ATFA publication *Timber Flooring* provides more detailed information and this needs to be used when assessing the installation. From this information it must be determined whether the product should be layed from the pack, acclimatised or whether additional expansion allowance is to be provided. If acclimatised this should be in an area that

closely reflects the expected average in-service conditions. As such the flooring is not to be acclimatised where it will receive intense sun exposure.



Source: ATFA Publication *Timber Flooring* 2009

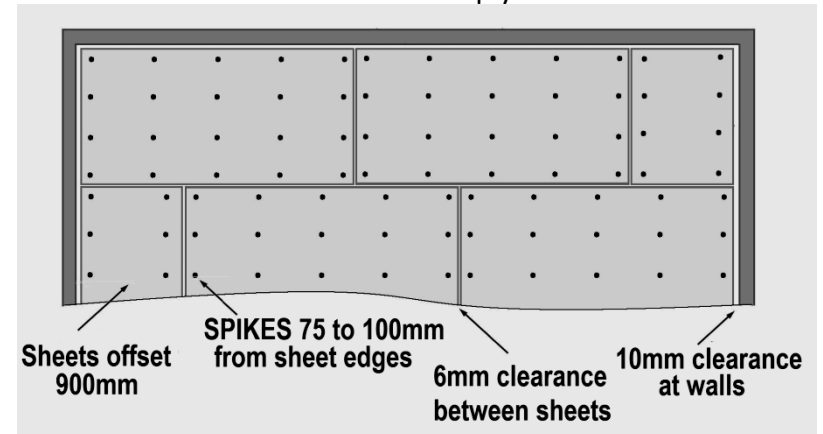
- The plywood subfloor must be dry at the time of floor installation (below 14% moisture content) and be no more than 2% higher than the overlay flooring. Note that plywood is manufactured at lower moisture contents, however the installation environment may result in some moisture uptake from the air and consequently higher moisture contents. The target manufactured moisture content range of Hurford overlay flooring is 9% to 13% with an average of approximately 10% to 11%. Note that if there are doubts as to the moisture content of the plywood due to wetting (by weather or other trades etc) or conditions of very high humidity, then the sheet flooring will require moisture content testing by the oven dry method. Moisture meters are inaccurate.

### 1.3 INSTALLATION

- A polyethylene moisture barrier, at least 0.2 mm thick is required to be placed over the slab, lapped 200 mm at joints and joints taped. The barrier is also required to go up the edge of the overlay floor at least as high as its upper surface.
- The recommended plywood sub-floor is structural grade, 15 mm thick and with a type A bond. Sheets to be installed in a 'brick' pattern with a 6 mm gap between sheets and a 10 mm gap to internal and external walls. Sheets are to be staggered

900 mm so that from sheet to sheet, fixings do not line up.

- Plywood sheets are to be fixed to the slab with hand driven 50 mm long by 6.5 mm 'Powers SPIKES' to manufacturer's recommendations or equivalent. Twenty are required per 2400 mm x 1200 mm sheet, equally spaced and with the outer spikes 50 mm from the sheet edge. The head of the SPIKE is to be driven below the surface of the plywood.

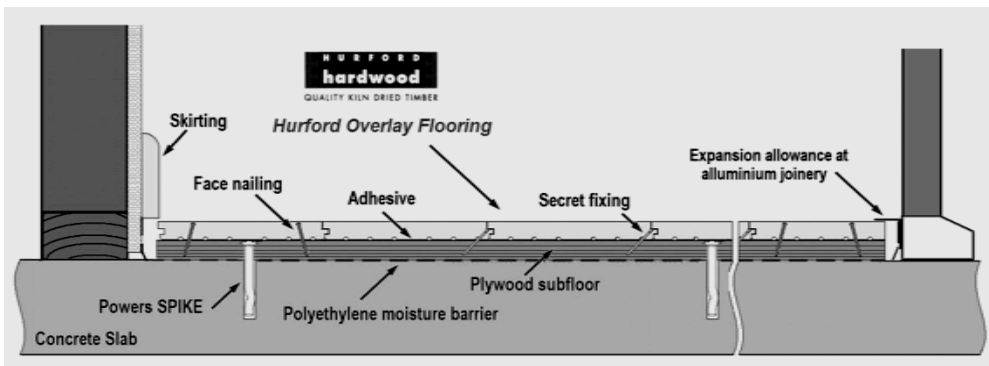


- If 12 mm thick structural grade plywood, type A bond, is to be used for the sub-floor, then the fixings to the slab are to be increased to 28 per sheet. Following installation of the plywood it is to be ensured that the surface is flat from sheet to sheet and that there are no contaminants or coatings that could affect the bonding of the adhesive. If this is not the case rough sanding is necessary to provide the required surface.
- Mechanical fixing combined with adhesive is necessary to achieve the required fixing performance.
- The adhesive is to be a flexible polyurethane flooring adhesive and a full trowel bed of adhesive is to be applied.
- Hufords do not recommend the use of rigid or semi rigid adhesives.**

When using these adhesives the manufacturer's recommendations regarding the application of the adhesive are to be followed.

In conjunction with adhesive fixing, the flooring is to be mechanically and secretly fixed and the recommended fixing is 'Powernailer' cleats – 25 mm long at 250 mm spacing and not within 75 mm of board ends. Note that staples are more prone to splitting the tongue.

A starter board is required when beginning to lay the floor and this will require face nailing. A gap for expansion allowance of at least 10 mm is also to be provided under the skirtings and around fixed obstructions. Additional expansion allowance is required in floors greater than 4m wide (always measured across the width of the boards) and in humid locations extra expansion & or acclimatisation will be required. It is usual to lay boards parallel with the longest wall in a larger room and for boards to run parallel to walls in hallways. Although the flooring has been manufactured to maximize its straightness, it is still necessary to ensure that the installation remains parallel throughout installation.



## Section 2: Installation to plywood or particle board on joists

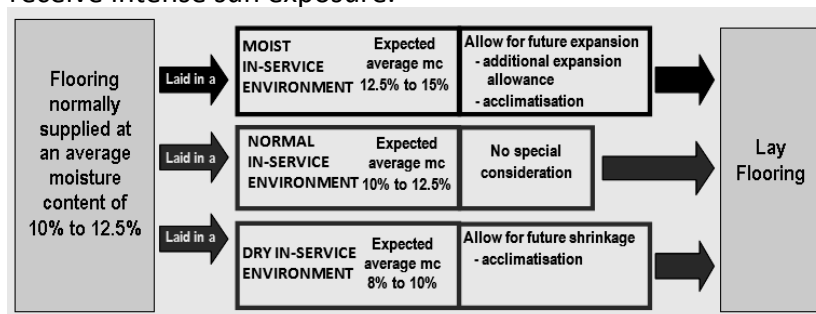
### 2.1 SUBFLOOR PREPARATION

- The sheet subfloor is to be of
  - good integrity – not delaminating or crumbling
  - clean – minimum of swept of fine particles and dust
  - free from any underlying problems – such as squeaks
  - free from contaminants or coatings as these can affect the bonding of adhesives.
- Particleboard and plywood sheet subfloors are to be fixed to manufacturers' instructions however it is also important to ensure that the sheet subfloor is flat to the point where any gaps below a straight edge between joists does not exceed 2 mm. Due to weather exposure and prior trades this will generally necessitate rough sanding throughout. It is not sufficient to make joints flat but have hollows in the sheet flooring between joists. The flatness is to be checked with a straightedge.

### 2.2 PRE-INSTALLATION

- The product has been provided with wrapping to top, sides and ends to minimise external influences. The protective wrap cannot be relied upon for protection from rain or other wetting. The product **must** remain out of the weather and intense sunlight during all phases of transport and storage. It should also not be stored where there are extremes in temperature and humidity such as an uninsulated metal garage or moist basement.
- The site environment needs to be assessed as do the expected internal conditions after the floor has been installed. In high humidity environments natural swelling can be expected after installation and in dry climates shrinkage generally occurs. The

effects of heating and cooling appliances must also be considered and particularly so if not in use when the floor is installed. The ATFA publication *Timber Flooring* provides more detailed information and this needs to be used when assessing the installation. From this information it must be determined whether the product should be layed from the pack, acclimatised or whether additional expansion allowance is to be provided. If acclimatised, this should be in an area that reflects as close as possible the average in-service conditions. As such the flooring is not to be acclimatised where it will receive intense sun exposure.



Source: ATFA Publication *Timber Flooring* 2009

- The space beneath lower storey floors requires careful assessment. The space must be dry and remain dry through all seasons and must be adequately ventilated. Moist or wet conditions beneath the floor and inadequate ventilation, which can maintain high humidity in the subfloor space, will detrimentally affect the overlay flooring even though there is a sheet subfloor between. The subfloor recommendations in ATFA publication *Timber Flooring* are to be followed.
- The plywood subfloor must be dry at the time of floor installation (below 14% moisture content) and be no more than 2% higher than the overlay flooring. Note that plywood is manufactured at lower moisture contents, however the installation environment often results in some moisture uptake from the air and consequently higher moisture contents. The target manufactured moisture content range of Hurford overlay flooring is 9% to 13% with an average of

approximately 10% to 11%. Note that if there are doubts as to the moisture content of the plywood or particleboard due to wetting (by weather or other trades etc) or conditions of very high humidity, then the sheet flooring will require moisture content testing by the oven dry method. Moisture meters are inaccurate.

### 2.3 INSTALLATION

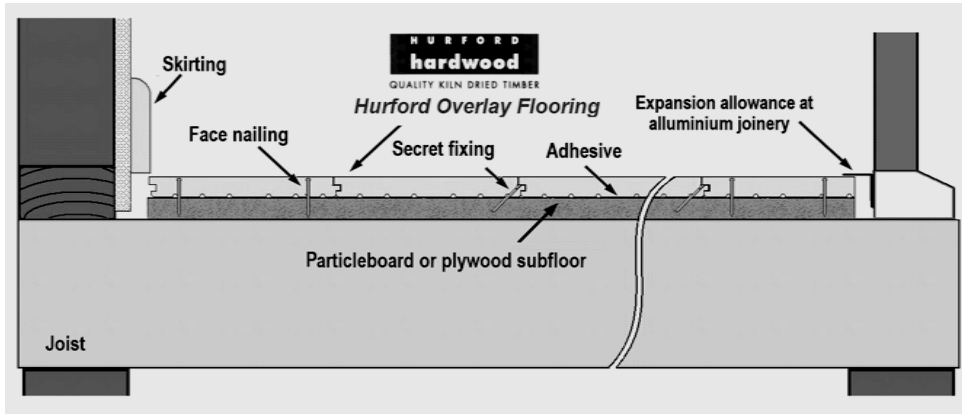
- The overlay flooring is to be laid where the length of the boards are at right angles to the joists.
- Mechanical fixings combined with adhesive is necessary to achieve the required fixing performance.
- The adhesive is to be a flexible polyurethane flooring adhesives and a full trowel bed of adhesive is to be applied.
- **Hurford's do not recommend the use of rigid or semi rigid adhesives.**

When using these adhesives the manufacturer's recommendations regarding the application of the adhesive are to be followed.

In conjunction with adhesive fixing, the flooring is to be mechanically and secretly fixed and the recommended fixing is 'Powernailer' cleats – 25 mm long at 250 mm spacing and not within 75 mm of board ends. Note that staples are more prone to splitting the tongue.

Note that a starter board is required when beginning to lay the floor and this will require face nailing. A gap for expansion allowance of at least 10 mm is also to be provided under the skirtings and around fixed obstructions. Additional expansion allowance is required in floors greater than 4m wide (always measured across the width of the boards) and in humid locations extra expansion & or acclimatisation will be required

It is usual to lay boards parallel with the longest wall in a larger room and for boards to run parallel to walls in hallways. Although the flooring has been manufactured to maximize its straightness, it is still necessary to ensure that the installation remains parallel throughout installation.



- The sub-floor must be dry and remain dry.
- Ventilation to be evenly distributed and to provide at least 750mm open space per meter length of wall.

### Section 3: Sanding and Finishing

After installation is complete it is important that the flooring is **not** sanded for 3 days to provide time for the adhesive to cure and boards to adjust to in-service conditions. Equally if the floor is to be left more than 7 days before sanding and finishing then additional protection may be necessary to prevent possible damage by trades or from moisture changes. During these times the floor is not to be exposed to extreme conditions of high or low humidity and in particular it is important to protect the flooring from intense direct sunlight.

There are many aspects that need to be considered when choosing an appropriate finish. Not only are aspects such as gloss level and wear resistance of importance but also the interaction between timber species, board cover width and finish. A professional floor sander and finisher who are aware of such aspects should be employed to sand and finish the floor. Particularly with wider board flooring such as this, the risks of edge-bonding are higher, which could lead to split boards and irregular gapping. Due to this some finish systems should be avoided.

### Section 4: The Completed Floor

It is important to realize that this is a solid timber floor that will be subject to the same conditions that result in movement in other timber floors. It can therefore be expected to swell and shrink with seasonal changes in humidity, however the product and installation method outlined has been developed to reduce this movement. Even so, it can be expected that the floor will show gaps and that these are likely to be more prevalent with dry conditions within the dwelling. Recommendations for all timber floors indicate that to reduce the effects of shrinkage and cupping near windows, window coverings, tinted glass or floor mats are effective. This is also the case with Hurford's Wideboard overlay flooring. It must however be realized that even with such measures wider gapping can be expected in these areas than other areas of the floor and a small amount of cupping may also occur. Floors should be cleaned regularly in accordance with the advice from the floor finish manufacturer.