# Installation Guidelines

**ATTENTION OWNER / INSTALLER**

Please carefully read and adhere to the following instructions before installing the flooring. Failure to do so may result in voiding the warranty of the product.

- **Quality Check**
  Before installation, thoroughly inspect the flooring material to ensure it meets the requested quality standards. Verify that the material is free from defects and matches the desired appearance and specifications.
- **Quantity Verification**
  Prior to starting the installation, confirm that the quantity of flooring is accurate and sufficient for the project. Double-check the quantity to avoid any shortages during the installation process
- **Colour and Finish Confirmation**
  Verify that the flooring material matches the specified colour, finish, and sheen level.
- **Job-site and Substrate Requirements**
  Must ensure that the job-site environment and sub-surfaces meet or exceed all applicable standards. Refer to the installation instructions section inside the carton for specific requirements. It is crucial to follow the recommendations of the construction and materials industries, as well as local codes

By carefully following these instructions, you will help ensure a successful installation and maintain the validity of the warranty.

## Areas of Attention

### Colour and Timber Variation

Timber is not a homogeneous material, and differences in appearance across timber planks are commonplace. Additionally, timber flooring is not colourfast and UV light will change the colour of your timber floor as part of a natural oxidation process. It is important to note that 10% wastage is recommended for optimal plank selection, offcuts and colour co-ordination throughout a space. Natural variations in colour, pattern, grain, knots, features and surface textures are not considered defects in the flooring, and once installed is considered to be acceptable. Timber flooring boards should be mixed on the floor by the installer according to colour and feature, so working from a few boxes is advised.

### Properties of Solid Timber

Timber is hygroscopic and moisture-content adapts to the environmental conditions, causing changes in dimension. In a dry environment, moisture will be drawn out of the board and solid timber will shrink, and vice versa in a higher humidity environment. Hence, factors such as moisture ingress, relative humidity, air conditioning, sunlight and room ventilation can cause timber to expand or contract. As a result, it is highly recommended that solid timber is acclimated to the local environment before installation. Additionally, solid timber should only be installed in areas which are environmentally controlled, occupied at all times, protected from heat / cold, sunlight, and systems should be used to control the internal temperatures and humidity before, during and after installation.

*Solid Timber **should not be used in wet areas** or high moisture areas e.g. bathrooms, toilets.*

## Site Assessments

Every site requires a detailed assessment of the climate and potential risk factors. In particular, it is important to know the average long-term relative humidity (RH) of the installation site.

The moisture content of the solid timber is the percentage weight of water present in the timber compared to the weight of the timber with water removed. Timber's moisture content varies with changes in humidity and temperature in the environment and it naturally absorbs moisture if the environment is humid and temperature is high, and vice versa

To minimise the risk of future expansion or shrinkage, it is important to lay and fix a timber floor that is close to the average moisture content of the environment in which it will be laid. However, if the long term relative humidity for the area is significantly different to that of the timber floor, it can cause problems. It is recommended that Relative Humidity (RH) and temperature levels are recorded prior to and during installation.

Acclimatisation of floorboards prior to installation is not necessary when the average supplied moisture content of the flooring is near the expected average in-service moisture content. Unnecessary acclimatisation can cause problems if the floorboards are acclimatised to a building site environment that is somewhat different from the expected in-service environment.

As per the Australasian Timber Flooring Association's guidelines:

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|---|---|---|---|
| **Normally flooring supplied** at an Average of 10% - 12% MC → | **Moist in-service conditions** MC 12% - 14% | ✦ Acclimatise<br>✦ Allow for future expansion | → **Start Installation** Installing timber flooring safely |
| | **Normal in-service conditions** | No special conditions required | |
| | **Dry in-service conditions** MC 8% - 10% | ✦ Acclimatise<br>✦ Allow for future shrinkage | |

The installation site's climate can be assessed using data from the Bureau of Meterology at www.bom.gov.au/climate/averages.

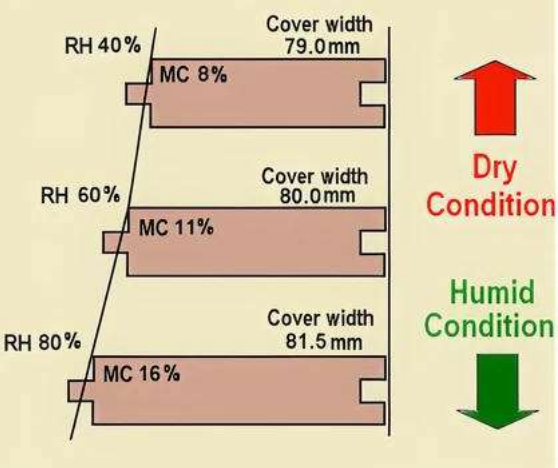


Figure 1. Excerpt from ATFA Solid Timber Flooring Industry Standard 2022

### Substrates for Installation

All substrates should be flat, dry, stable and clean. Importantly, all substrates must be structurally strong and able to withstand seasonal movement in the surface timber.

- Battens or joists (narrowboards only <=90mm)
- Timber, plywood, particleboard (80 - 130mm wide)
- Concrete and cement slabs (full trowel adhesive)

Adequate subfloor ventilation is an important factor in reducing expansion and cupping of hardwood timber flooring. Where humidity remains high beneath a floor, the boards will absorb the moisture and expand. Important issues about subfloors

- Air vents should always remain unobstructed
- Number of air vents and size should meet or exceed BCA requirements
- Ground level below flooring should be well drained
- The subfloor ground should be flat, level and clear of any debris. It is recommended that the ground below the subfloor be sealed with an impervious membrane, black plastic polysheet or vapour barrier. The plastic should be taped continuously with a 200mm overlap. As subfloor conditions can change, this alone can greatly improve the performance of a timber floor in the future.

### Internal Micro-Environment Climates

The internal environment should also be assessed before installation. Within a dwelling, a number of climates may develop, causing areas of flooring to respond differently within the same dwelling. These include large expanses of glass, fireplaces, fridges, air conditioners, any appliances that vent warm air, the aspect of the house and two-storey construction. All of these can have an effect on the dimensional movement of the boards.

When floors are exposed to direct sun through large glassed areas, protection should be considered before, during and after construction. Evaporative coolers add moisture to the air and raise the relative humidity, resulting in moisture contents in the flooring that are higher than under ambient conditions. The likely movement of a floor after installation should also be a consideration when assessing the site. Small differences in moisture content between boards at the time of manufacture (5% is allowed by Australian Standards) together with variable conditions within the house (such as a west-facing room compared to a south-facing) will cause further variation in board width. For this reason, it can be expected that small gaps will occur at the edges of most boards, particularly during drier months. These gap sizes may differ across the floor.

### Expansion Gaps

Expansion gaps of 10mm should be left around the perimeter of the floor (against walls and fixtures). This gap provides space for the flooring to expand and contract if required. For domestic applications floor widths (width-wise) over 6m will require an intermediate expansion joint as per Australian Standard AS1684 with an extra allowance for expansion in moist conditions. A smaller expansion gaps every 800mm to 1000mm and spacing of 1mm- 1.5mm (approx 20 cent coin thick). Cork expansion gaps around certain perimeters should be installed level with the timber surface. Expansion joints are best placed at doorways or in line with internal walls.

## Installer Expectations

The installer assumes all responsibility for final inspection of product quality. The inspection of the entire floor should be done prior to installation and it is expected the colour, finish and quality is inspected before installation. Use reasonable selectivity and hold out or cut off pieces with glaring defects. If the flooring is not acceptable, contact your dealer immediately.

Before commencing any installation, ensure the environment of the job site and the condition and type of the subfloor are acceptable. Everfloor does not assume any responsibility for job failures resulting from or associated with incorrect installation or maintenance.

This information should only be used as a guide and the installer should apply all NCC / BCA & Australian Standards requirements. It is recommended that a qualified professional timber flooring contractor installs the solid timber floor, it is generally not suited as a DIY project. We make no warranty or guarantee of the quality of the the installer's workmanship, and takes no responsibility for failures resulting from or connected with site conditions or installation methods. The packaging around the flooring are paper based and may be damaged during handling or transport, however, if the boards are undamaged, they are considered in good condition.

The Customer / Installer must decide the direction in which the floor is to be laid, consider major light sources and floor plan dimensions. It is the responsibility of the installer/owner to ensure that site conditions are acceptable for the installation of the flooring.

Upon delivery timber flooring and decking products should be stored indoors where they can be protected from the elements. Do not store outside. Topdeck solid strip flooring is delivered in strapped bundles within a pack. It is recommended that the bundles are kept strapped until just before laying. Please refer for specific board width below for additional guidance. Topdeck prefinished solid timber flooring must be fixed with a recommended polyurethane flooring adhesive and applied using a 5mm v-notched trowel.

### Storage & Handling

Upon delivery timber flooring and decking products should be stored indoors where they can be protected from the elements. Do not store outside. Store products in at the equilibrium relative humidity of the space of installation. Topdeck solid strip flooring is delivered in strapped bundles within a pack. It is recommended that the bundles are kept strapped until just before laying. Please refer for specific board width below for additional guidance.

### Installation

Everfloor's solid timber flooring must be fixed with a compatible MS (modified-silane) timber floor or polyurethane flooring adhesive, and applied using a 5 - 6mm V-notched trowel. Recommended products are FLOOR+ MS Adhesive and F.BALL B96 Timber Adhesive.

Spread only enough for 3 or 4 boards at a time as per manufacturer's instructions. Start the first row of boards with the tongue facing the starting wall and the left-hand end of the board against the block/wedge on the side wall. Slot the tongue firmly into the groove on the fixed temporary board and then press the board down firmly into the adhesive, then secret nail/staple the board into place.

Working from left to right, lay the next board and continue working towards the right then measure and cut a strip to finish the first row, remembering to allow for a minimum 10mm expansion joint. To minimise cutting wastage, try to make the off-cut from this board long enough to use elsewhere. As the next row is added, tap the boards gently together using a tapping block for a tight fit. Use a pull tool to fit the last board closest to the wall. Start all new rows with a board at least 450mm shorter or longer than the butt joint used in the previous row. Scribe/rip the last board to fit allowing for the minimum 10mm expansion joint along its whole length.

Once the main floor area has been laid, remove the temporary blocks. Clean up excessadhesive as per manufacturer's instructions. Use of strong solvents is to be avoided so that the pre-finished surface is not damaged. Its good practice that all solvents be tested on a sample to ensure the prefinished sample is not damaged.

## Narrow Boards (80 - 90mm Width)

**Secret Nail/StapleBoards with Adhesive on Battens or Plywood**

As a minimum requirement for secret nailing on plywood with adhesive use 32 mm-long staples or 45mm long staples or equivalent size nail/staple as specified in AS1684 for battens and plywood / particle board. Battens may be used to compensate for minor fluctuations in concrete level. Lay battens 450mm apart on the plastic membrane (minimum 200um) at right angles to the direction of the new floor.

Adjust levels with plywood or masonite packing and use masonry anchors to attach battens to the slab. For plywood / particle sheeting (recommended minimum thickness of 12mm or greater) to the concrete slab after first laying a polyethylene membrane (minimum 200 micron).

Plywood must comply with AS/NZS 2269 - Part 0 Plywood Structural Specifications. Secret-nail the boards permanently to the battens with a secret-nailing gun after apply adhesive to the batten top. A secret-nailing gun will force the boards together at the same time as it drives the nail in at a 45˚ angle. When installing over an existing floor or on a plywood / particle board also use a MS (modified-silane) or polyurethane flooring adhesive designed for solid timber, with sufficient strength, as per manufacturer's instructions.

If nailing into battens, nailing should be on every joist or at 450mm centres. Start by laying the longest length first, in a triangle or "rack" from one corner. Lay first board with groove towards the wall and leave a 10mm expansion gap all round the room between the floor and the wall (not the skirting, if any). This gap will be covered by the skirting. Retain the existing skirting if the new board can slide under it. If not, remove the skirting. Continue each row by laying the similar-length boards in each row, adding and cutting short lengths to finish the row (still leaving a 10mm gap). There must be at least 450mm distance between butt joints in adjacent rows for structural integrity.

## Wide Boards (92 - 130mm)

**Secret Nail/StapleBoards with Adhesive on Battens or Plywood**

Install wider flooring by using a combination of secret nailing and full trowel adhesive to attach the hardwood flooring to a solid sheet subfloor. Wider floorboards have greater potential for movement and require full-trowel adhesive for a secure installation. The installation is similar to that of the 80mm-90mm boards on plywood but more allowances for board movement need to be accounted for.

Covering the expansion gap the minimum 10mm expansion gap left between the wall and the floorboards will need to be covered. This can be covered with an appropriate skirting which should be nailed to the wall and not to the floor. If the timber flooring is installed with existing skirtings in place use an appropriate timber beading to cover the gap, fixed to the skirting and not the floor.

## All Widths (80 - 130mm)

**Full Trowel Adhesive on Concrete**

It is recommended that only lengths up to 1900mm are installed with adhesive only (and no nailing), due to plank alignment challenges. Longer boards may be attempted, however, there may be slight warping in solid timber boards at longer lengths, making it more difficult to perfectly align boards. Slight straightness variations are common in solid timber and are not considered a defect.

Substrates must be strictly checked and treated prior to installation.

- **Flat**
  must be within 3mm variance over 2 metres, as measured by a 2 metre straight edge.
- **Dry**
  concrete subfloors should not exceed 75% RH and 3% CM (cement moisture content) when tested in accordance with AS1884-2012. Wood-based subfloors must not exceed 14% MC.
- **Strong**
  strong and firm concrete substrates with minimum 20Mpa, tensile strength greater than 1.5MPa. Sand and cement and screed substrates are not suitable, only fully cured concrete.
- **Clean**
  no surface contaminants e.g. curing compounds, sealers, paint, dust, plaster, oil.

Moisture is the most common reason for adhesive failure, and a complete moisture barrier coating e.g. FLOOR+ POLY280 is recommended in every instance of an adhesive fixed flooring installation prior to the application of glue. Photographic evidence of testing data and application of a moisture barrier is required for warranty applications.

Use a 6mm V-notch trowel to apply adhesive and ensure 100% transfer of adhesive between the concrete and planks. The planks may need to be weighted to assist with high bond outcomes, and avoid foot traffic during curing to prevent movement or gapping in boards. If plank alignment issues arise, flooring tape may assist with holding planks in place whilst curing.