

## Timber Floors Installation & Maintenance Guideline

### IMPORTANT INFORMATION: DO NOT INSTALL TIMBER FLOORING IN ANY COMMERCIAL APPLICATION.

#### 1. General

Riverhill Timber Flooring (**Timber Flooring**) is designed to be installed by secret nailed, direct adhesive fixing (glue down) or as a floated floor. Please inspect each floorboard in optimal lighting for visual defects before installation. We also recommend ensuring that the locking system is functioning properly when installing. If you identify any issues before, during or after installation please contact us immediately. Please note that only a direct adhesive fixing system is suitable for Herringbone or Chevron parquetry installation.

Heavy and bulky objects, such as island benches, should not be placed on floating floors. Timber Flooring must be cut in and installed around such objects.

#### 2. Timber Flooring Facts and Variation

Colour, shade, tone, markings, texture and veining may vary between samples of what is supplied. Timber Flooring supplied may (as further detailed in this Guideline):

- exhibit variations in shade, colour, texture, surface, finish, markings and may contain natural fissures, occlusions, lines, indentations and may fade or change colour over time;
- expand, contract or distort as a result of exposure to heat, cold, and weather;
- mark or stain if exposed to certain substances; and
- be damaged or disfigured by impact or scratching.

Subject to any non-excludable rights under Australian Consumer Law, Riverhill accepts no liability where the Timber Flooring it supplies

differs to samples of the Timber Flooring. For the purpose of this clause, 'samples' includes actual product samples as well as items on display online, on the website or in any other printed material.

A failure to follow this Guideline may void the Riverhill Timber Flooring warranty.

#### 3. Timber Flooring Moisture Content

Before installation, a moisture meter must be equipped to ensure the moisture content of Riverhill Timber Flooring remains in about 8%-12% on average, as timber floor is a natural product, a significant change of moisture content may result in product distortion.

#### 4. Preparation

##### 4.1 Locality and Installation Environment

Seasonal relative temperature, humidity levels and variations in the installation area, as well as the projected average floor moisture content in that area, must be evaluated before installation. Generally, timber flooring may shrink more in dry environments and expand in more in humid environments. In the event of extreme climatic conditions, product distortion is to be expected.

The condition of Timber Flooring may be impacted by the internal environment of the building, such as the heating and cooling systems and the prospective effect of the large, glassed windows (if any), must be evaluated.

The following should be considered for optimal condition of Timber Flooring before, during and after the installation

- Floor surface temperature min. 15°C
- Ambient air temperature in between 18-24°C
- Relative humidity 40-60%

##### 4.2 Handling & Storage and Inspection Of Boards

Please ensure the condition of the products before and during installation.

Despite strict quality control, floorings may have been damaged, for example, during

transportation. Do not install any damaged flooring.

Timber Flooring must be stored in a cool, shaded and dry location, and never be stored outside under direct sunlight or rain, on a cement floor, in an open car port or in any damp conditions. Always store the packs flat and never lay the packs upright against a wall.

Generally, Timber Flooring does not need to acclimate, unless the temperature and humidity conditions exceed the conditions mentioned above, then allow the timber flooring to acclimate for at least 48 hours in their original, unopened packaging in the installation area. To avoid moisture accumulation on the timber flooring, never open the packs until the day of installation.

#### 4.3 Subfloors

A subfloor is the structural element that the flooring is attached to which includes concrete subfloor or timber and sheet subfloor. All subfloors must be evaluated for factors that may have an impact on the installation, ongoing performance, and appearance of the floor. All subfloors must be even, dry, clean, and solid. Ventilation requirements must be in accordance with the National Construction Code (NCC) of enclosed subfloor spaces.

Before proceeding, any areas of concern must be addressed by the installer.

#### 4.4 Subfloor Flatness

The subfloor must be ground and levelled in accordance with the standard set out below before installation of the Timber Flooring. An uneven subfloor may cause the locking system to fail, and induce a hollow and drummy sound after installation, which may result in early deterioration and failure of the floor.

- Timber Flooring subfloor flatness standard (Direct adhesive method): Not to exceed 3mm in any 3m<sup>2</sup> in all directions
- Timber Flooring subfloor flatness standard (Floating method): Not to exceed 3mm in any 1m<sup>2</sup> in all directions
- ATFA Timber Flooring subfloor flatness standard (Direct adhesive method): Not to exceed 3mm under a 3.0-metre straight edge ATFA Timber Flooring subfloor flatness standard (Floating method): Not

to exceed 3mm under a 1.0-metre straight edge

- ATFA levelness of floor in the new buildings provided to a flooring contractor: Not to exceed 4mm in 2 metres.
- Timber and sheet subfloor, particleboard and plywood subfloor should be sanded (gently and thinly) on all sides and surface to ensure flatness.
- Carpet, carpet staples and underlay, glue residue and existing floating floor must be removed to ensure proper installation.

#### 4.5 Subfloor and Moisture Content

Please ensure the subfloor is clean and dry before installation and remains dry after installation. A moisture meter is required to be equipped to read the moisture level. Moisture content level requirements are listed below.

- **Concrete** – Concrete subfloors must be dry, clean and crack free. A dry concrete subfloor index indicates on the moisture meter reading is up to 2% and in concrete relative humidity (RH) of up to 75%, as if the concrete subfloor had been previously covered, acceptable value of moisture meter reading is up to 3.5% and in concrete relative humidity (RH) of up to 80%. (Index figured refer to ATFA)
- **Timber and Sheet** - Timber and sheet subfloor must be dry, clean and free of loose or grinding planks or joists, nails and screws. A dry timber and sheet subfloor index indicates on the moisture meter reading is up to 8% and if the timber and sheet subfloor has been previously covered, acceptable value or moisture meter reading is up to 10%. Relative humidity (RH) is not exceeded 95%.

For moisture protection when installing Timber Flooring with direct stick installation, the subfloor should be completely sealed with a roll-on moisture barrier.

Any reading higher than the figure above requires further investigation into possible moisture sources and may require more moisture protection or further actions to meet the requirement prior to installation.

#### 4.6 **Moisture Barrier; Underlay & Acoustic Underlay**

To provide moisture protection from Timber Flooring, moisture barriers and underlay with acoustic sound absorbing/acoustic underlay (particularly important for multilevel apartments) is required to be installed prior to any installation of timber flooring by using a secret nailed method or floating method.

A recognised acoustic underlay must be installed with a polyethylene moisture vapor barrier underneath, or use a 2 in 1 foam underlay that comes with a moisture vapor barrier built in. Both should be installed on a dry subfloor with moisture proof tape. Joins and seams between plastic sheets must be sufficiently overlapped and taped to prevent moisture vapor leakage from underneath. A moisture barrier should be at least 200mm and run at least 100mm vertically up the skirting boards on perimeter walls and trim back after installation to avoid moisture ingress.

#### 4.7 **Expansion Allowance**

The standard calculation formula of expansion across the width is 1.5mm expansion for every 1m floor width and length.

For Timber Flooring, allow at least 10-15mm expansion gaps on each edge or fixed vertical perimeter surface. The expansion gap allowance is also determined by the temperature variations in the installation building. The climatic conditions of the installation area will as well give an impact about the expansion gap allowance. In areas with low or average humidity, the gap allowance might be 10-12mm; and in areas with high humidity, the gap allowance might need to be 12-15mm.

Extra expansion gap allowance will be required to compartmentalise a larger room area. Room to room expansion breaks at doorways or room areas exceeding 8m x 8m is recommended.

We recommend well undercutting any door jam, frame or threshold/sill at doorways or transitions, remove any spacers or wedges from the room and install Riverhill skirting boards, scotia, or other finishing trims for covering the perimeter expansion gap. Never fix finishing trims directly to the floor or compromise the expansion gap, fixing should be done only to the wall. Silicone or caulking compound must not be used as it restricts movement and prevents the floor from floating.

Inadequate expansion gaps (including but not only in doorways) and under trims, can cause a floor to buckle, peak, cup or separate, and may result in floor failure.

#### 4.8 **Floor Heating System:**

No electrical radiant heating system should be installed with/underneath Riverhill Timber Flooring under both direct adhesive installation and floating installation. Only in-floor hydronic underfloor radiant heating system with proper installation is compatible with Riverhill Timber Flooring under direct adhesive installation. Please make sure the temperature of the floor never exceeds 26°C at any time.

### 5. **Installation**

The subfloor or underfloor must be completely even, dry, clean and solid. To ensure proper installation, carpet staples or glue residue must be removed, and the floor must be clean.

Check for evenness before proceeding with any installation: Hammer a nail into the centre of the floor. Tie a string to the nail and press it against the floor. Pull the string all the way to the farthest corner of the room and examine the floor at eye level for any gaps between the string and the floor. Move the string around the perimeter of the room, noting any gaps larger than 3mm. Any floor unevenness greater than 3mm per 3m<sup>2</sup> when using direct adhesive method for installation, or any floor unevenness greater than 3mm per 1m<sup>2</sup> when using floating method for installation, must be sanded down, or filled in with an appropriate filler.

Moisture problems of the floor must be thoroughly checked. Any moisture issues must be resolved before installation.

New concrete subflooring must cure for at least 60 days before installation.

### 6. **Floating Method**

For installation on concrete floors or any floors over a crawl space a moisture vapor barrier must be laid down first. A recognised 4 mil polyethylene should be used. Run the polyethylene 10cm up the walls and overlap at the seams. Tape seams.

Foam underlay is required for all Riverhill Timber Flooring installation with floating method. The foam underlay should be applied in the same direction as the timber panels. The underlay

should be butted together with no overlap. Tape seams together.

The tongue on the long side of the panels facing the wall needs to be removed from the appropriate amount of panels for the first row. Cut the tongue and ensure that the decorative surface of the timber is well fit when installing the finished trim. Score the tongue several times with a utility knife until it snaps off easily.

Apply PVA wood working glue in all grooves of both long and short ends, all boards should be glued together in a staggered pattern. (Sika Bond PVA Interior & Exterior Wood Working Glue is recommended for all Riverhill Timber Flooring installation.) Apply PVA glue to only as many planks as can be installed before the glue dries.

If the glue is dried before assembly, the tongue and groove will not fit together without gapping. The floor should not be walked on while the glue is drying, which usually takes about an hour, before proceeding with the rest of the floor installation.

Begin with a corner by placing the first panel with its trimmed side facing the wall. Use spacers along each wall to maintain a 10-15mm expansion space between the wall and the flooring.

Use a rubber mallet and a tapping block to attach the ends of the panels. Carefully align the edges.

Continue along the wall until the last panel. To fit the last panel, mark off the excess and saw off with a handsaw cut when the decorative side is up. When using a jig or circular saw cut, please make sure the decorative side is down to avoid chipping. Tap the last panel into place with a pull bar.

Start the next row with the offcut piece from the previous row to stagger the pattern. The piece should be at least 20cm long with a joint offset of at least 40cm. To attach the panels, use a rubber mallet and tapping block to tap the tongue into the grooves of two panels. Ensure that any gaps are as small as possible. Continue locking each panel into place, ensuring a straight and tight fit beginning with the long side first and then tapping the short side into place. Always use a rubber mallet and tapping block instead of striking the floor directly, which could damage the panels.

To fit the last row, place a panel on top of the previous row. With the tongue to the wall, place another panel upside down on the one to be

measured and use it as a ruler. Do not forget to allow room for spacers.

Cut the panel and tap it into place with the pull bar.

Expansion space is always needed for areas, such as door frames and heating vents. First, trim the panel to the proper length. Then place the cut panel next to the actual position and use a ruler to measure and mark the areas to be cut out. Cut out the marked points and allow the necessary expansion distance on each side.

Trim door frames by turning a panel upside down as a height measurement and using a handsaw to cut away the necessary height so that panels slide easily underneath the frame.

After removing spacers from all expansion gaps, install finishing molding around the room.

## **7. Direct Adhesive Method**

Apply primer proof on concrete floors or any floors over a crawl space.

Draw a chalk line on the subfloor. The distance of the chalk line and the starting wall should be two rows of planks plus a 10-15mm distance of expansion gap.

Apply adhesive between the chalk line and the wall, only spread as much adhesive in the area that flooring can be installed before adhesive dries out.

Begin with the corner, with the tongue facing the starting wall. Place the panel onto the adhesive.

Start the next row with the offcut piece from the previous row to stagger the pattern, with the tongue facing the first row. The piece should be at least 20cm long with a joint offset of at least 40cm.

Place the flooring in the wet adhesive as soon as possible and continue with the installation, start each row with the offcut piece from the previous row and make sure the plank length as mentioned to maintain the end joint stagger from row to row.

To fit the last row, place a panel on top of the previous row. With the tongue to the wall, place another panel upside down on the one to be measured and use it as a ruler. Do not forget to allow room for spacers.

Cut the panel and place it on the floor.

Expansion space is always needed for areas, such as door frames and heating vents. Do not press the finishing molding too hard when installing, always leave enough room for flooring to move naturally. Install finishing molding around the room.

Any adhesive spilt on the flooring during installation should be cleaned up right afterwards.

Reduce traffic on the floor after installation to a minimum level until floor adhesive is completely dried and wait for at least 24 hours to place any furniture on the flooring.

## 8. Finishing Molding

Please select Riverhill finishing molding based on the situation and the instruction below.

**Reducer Molding/Carpet Reducer:** When the adjoining surface is lower than the timber flooring or when the flooring meets carpet. Place the U-track 7mm between the edge of the flooring. Screw, nail or glue down the track directly to the subfloor, then insert the reducing strip into the track.

**T-molding:** When two level surfaces meet in doorways or for expansion joints. If the area is wider than 8m, an expansion joint is needed. Expansion joints with T-molding can be placed in any inconspicuous place. Place the U-track 7mm between the edge of the flooring. Screw, nail, or glue down the track directly to the subfloor, then insert the T-molding into the track.

**Landing/stair molding:** To finish flooring on landings or stair edges. For safety and stability, moldings must be glued and screwed to the subfloor. Countersunk screws should be covered with colour fill.

**Quarter round molding/Scotia:** To finish the perimeter of the room. Quarter round molding or scotia must be nailed directly into the baseboard.

Never attach finishing molding/trims directly to the floor and make sure any attachment does not compromise or affect any expansion gaps.

## Care & Maintenance

The maintenance routine for proper care of this product is as follows:

### 1. Routine Maintenance

- Vacuum, mop or sweep Timber Flooring on a regular basis, to remove dirt, dust,

adhesive after installation, grit, water, etc. that can scratch or harm the product.

- The mop must be a cloth-covered, damp mop used with a pH neutral floor cleaner. Do not spray or pour any excess amount of water or floor cleaner on the Timber Flooring or at any time leave any excess amount of water or floor cleaner on the Timber Flooring as this may damage the product.
- Do not use soap based, oil based, ammonia based, wax based or abrasive floor cleaner, acrylic finishes, bleach, or acidic material (e.g. vinegar) on the floor which may leave a slippery and dull finish that is extremely hard to remove or may damage the floor.
- Never use steam mop, steel wool or wax and polish on the Timber Flooring.
- The vacuum must have a brushed head, dust filter or floor head attached. Do not use a vacuum with a hard head attachment or with a beater bar on the brush roll.
- Always soak or wipe up any spills (water, wine, pet urine, etc.) on the floor with a dry or clean cloth promptly; most spills can be easily wiped up with the immediate action. However, some liquids or materials containing strong pigments/dyes may still leave permanent stains to the Timber Flooring, such as grease, oil, dyes material, waxes, ball point pens, marker pens, pet accidents, some renovation or construction products (e.g., tar), or foods and beverages such as mustard, curry, wine, coffee, or tea, etc. Do not leave spills unattended for an extended period.
- Stubborn stains can be removed by spot cleaning using a damp cloth or sponge with a pH neutral floor cleaner (e.g., pH neutral Bona Wood Floor Cleaner) or stain remover designed specifically for Timber Flooring.
- Place drip pans beneath indoor plants to prevent water leakage.
- Maintain the indoor temperature above 5°C (preferably between 17°C – 23°C).

- Ensure the subfloor temperature is always within the temperature range specified in this Guideline.
- Do not install a heating system under timber floor with a floating installation method. A capable heating system (mentioned in installation guide) can only be used under timber floor with direct sticked/secret nailed installation method.

## **2. Preventative Maintenance**

### **2.1 Prevent scratches and dents**

- Place a mat in front of all entrances/kitchen sinks to keep dirt, sand, grit, and water off the Timber Flooring.
- We recommend using a rug or mat in any heavy traffic areas or underneath any large furniture/appliances/item (avoid using rugs or mats with rubber backs/vinyl backs and non-breathable rugs or mats as these may induce moisture absorption).
- Pet's nails may cause scratches and scuffs.
- Always stick soft pads, floor protectors or furniture sliders to the base of all furniture in contact with Timber Flooring and replace them as necessary periodically.
- Move rugs/mats or large furniture/appliances/items periodically to allow the natural aging of the Timber Floor. Pick up heavy furniture or appliances when moving across the floor instead of sliding.
- Avoid walking on Timber Flooring while wearing shoes with heel taps, sport cleats, stiletto heels or in need of repair as the sole may cause significant damage to the Timber Flooring.
- Avoid any sharp objects protruding across the floor such as rocks, nails, or gravel.
- Never allow extremely hot material contaminate the Timber Flooring, such as cigarettes, matches or ashes which contact may result in permanent damage to the Timber Flooring.

### **2.2 Prevent discoloration**

- Avoid direct sunlight on Timber Flooring as exposure to sunlight/UV stimulates

oxidation and aging of the floor and may lead to colour share variation.

- Curtains and UV resistant film are recommended (particularly for buildings with large, glassed windows).
- Avoid using any rubber products on the floor, such as rugs/mats with rubber/vinyl backs, soft pads/furniture sliders with rubber/vinyl backs, rubber soles shoes/slippers, furniture/cabinet with rubber wheels, etc. Contact with rubber may leave permanent marks on the floor.
- Avoid using any rugs/mats that are made with non-breathable material that may induce moisture trapping/accumulation as this may discolour the floor.
- Please be cautious that some foods and beverages, such as oil, wine, coffee, tea, condiment and curry, etc. may migrate permanent stains to the floor and lead to colour variation.

### **2.3 Prevent expansion and shrinkage**

- Never steam mop or wet mop the floor with water or any other liquid floor cleaner. Excessive amounts of water or liquid may lead to unnecessary expansion of the floor.
- Always wipe up spills promptly with a damp cloth.
- Keep the indoor humidity level between 45%-60%. Please use a humidifier in a dry climate or a dehumidifier in a humid and wet climate to maintain the ideal humidity level.
- Direct sunlight (especially buildings with large, glassed window) can raise and drop the temperature of the floor surface. Any rapid and extreme temperature changes may cause floor gapping with expansion and shrinkage. We recommend Timber Flooring is protected using indoor temperature control.

## **3. Fix dings and scratches**

- Minor scratches, marks or dents on Timber Flooring surfaces may be repaired/removed by using a staining pen of the matching colour.

- Slightly deeper scratches or marks can be diminished by using a combination of matching coloured putty and stains.
- However, before these products are used, we recommend a test sample with the compatible repair kit on a less visible area or any left over floor boards which were not installed.
- Replacement planks are recommended for severe or very deep scratches or dents.

#### **4. Common Characteristics of Timber Floors**

Whilst Timber Flooring is made from natural materials, materials may differ in colour, texture and naturally occurring features within and between individual pieces and batches of the same species.

Timber Flooring products may vary from board to board, job to job, and from the samples on display in all jobs supplied. The colour of your flooring may change over time because of UV light and oxygen exposure. Minor splits and wood checks/cracks may naturally occur in timber.

Timber Flooring products continue to absorb and release moisture, expand, and contract over their lifetime depending on local conditions, environmental conditions, and weather changes. Even with proper installation and maintenance, slight expansion, and contraction, as well as board separation, is normal; however, excessive movement due to extreme weather conditions is to be expected. It is critical to be aware of and to regularly check conditions to ensure that your floor performs. This is a normal feature of timber floors and not considered as a manufacturing defect.