

Installer's Responsibility

IMPORTANT!

It is the installer's responsibility to carry out the final inspection of the floor to ensure the colour, grade, quality, manufacture and factory finish of the product is acceptable. Additionally, the inspection of all flooring must be done before installation. Carefully examine the flooring for colour, finish and quality before installing it. The installer must use reasonable selectivity and hold out or cut off pieces with deficiencies, whatever the cause. If the product is deemed not acceptable for any reason, do not install it and contact your supplier immediately.

The product must be checked with the end user to ensure the correct product has been supplied, and that the end user is happy with the product.

Once a product has been laid, and later discovered to be incorrect, or for any boards with defects that should have been spotted at the time of installation, no financial assistance can be given, nor can the product be returned.

Notes on Timber Floors

Wood flooring is a hygroscopic material subject to dimensional change as a result of variations in moisture, temperature and humidity in the surrounding environment. This has led to increasing awareness of the need to maintain an environment that is acceptable for wood floors. Wood flooring simply needs to be in equilibrium with the surrounding environment in which it will be installed, at or near normal living conditions. Always account for time of year and geographic location.

Our floors are kiln dried to within 8 and 12% which is the moisture content range that the floor would naturally achieve when installed in an environment which is controlled to stay within a relative humidity range of 40% to 60 % and a temperature range of 15°C to 26°. When the floor is neither gaining nor losing moisture this is known as the equilibrium moisture content (EMC).

Ted Todd recommends that the environment be controlled to stay within these parameters even when the property is unoccupied. If due to the geographical location seasonal variation is outside of these parameters the extra expansion or contraction must be allowed for in the fitting.

NOTE: Not properly controlling your environment may cause excessive expansion, shrinkage, dimensional distortion or structural damage

The point of acclimatising wood flooring before installation is to allow the temperature of the wood to adjust to the installation site's —normal living conditions, having controlled the humidity conditions and moisture content that will typically be experienced once the structure is occupied.

For site-finished wood flooring - After installation, allow the flooring to stabilize for a period of time before finishing.

The worst-case scenario for installation is one in which wood flooring is stored at the jobsite in an uncontrolled environment especially one that is subject to excessive moisture and humidity. It does no good at all, in fact it is likely harmful to store wood flooring at the jobsite under conditions that don't reflect those normal environmental conditions. Garages, basements and exterior patios, for example, are not acceptable areas to store wood flooring.

Minimum Jobsite Requirements

- Wood flooring should be one of the last jobs completed on the construction project. Limit foot traffic on finished wood flooring.
- Evaluate the jobsite for potential problems before installation begins, and before wood flooring is delivered to the jobsite.
- Ensure any water pipes if present in the sub floor are at an adequate level or insulated to not compromise the installation and/or cause an effect on the timber after installation. Failure to insulate can cause localized shrinkage of the floor boards
- Ensure electrical wires if present in the sub floor are at an adequate level to not interfere with the installation
- Subfloors (wood or concrete) should be checked by an appropriate method for establishing moisture content. Average subfloor moisture content should be within the range as specified in Chapter 2, Moisture Testing
- Unless a waiver or letter of protest listing exceptions exists, installation constitutes acceptance of subfloor/substrate, the jobsite itself - including the ambient temperature and relative humidity at the time of installation, and all impacting variables that may affect a wood floor
- Surface drainage should direct water away from the building
- Do not deliver wood flooring to the jobsite or install wood flooring until the building is enclosed
- If heating and/or air-conditioning is in operating condition, it needs to be operating. If it is not possible for the permanent heating and/or air-conditioning system to be operating before, during and after installation, a temporary heating and/or dehumidification system that mimics normal temperature and humidity conditions can enable the installation to proceed until the permanent heating and/or air-conditioning system is operating.
- Do not deliver wood flooring to the jobsite or install wood flooring until appropriate temperature and humidity conditions have been achieved. Appropriate temperature and humidity conditions are defined as those conditions to be experienced in the building after occupancy.
- Do not deliver wood flooring to the jobsite or install wood flooring until all concrete, masonry, plastering, drywall, texturing and painting primer coats are completed.
- Basements and crawl spaces must be dry. If power washing is required in the basement, do so before wood flooring is installed and allow subfloor and basement to dry before installing wood flooring.
- Crawl space should be a minimum of 457mm from ground to underside of joists.
- Crawl space earth (or thin concrete slab) should be covered 100% by a vapour barrier of polyethylene (minimum 1000 gauge) or other recommended puncture-resistant membrane
- Where a proper ground covering is in place and when venting is required, the crawl space should have openings of 1500mm² per meter run on two opposing sides
- For crawl spaces without ventilation openings, vapour retarder joints must overlap a minimum of 150mm and be sealed or taped. The vapour retarder should also extend at least 150mm up the stem wall and be attached and sealed to the stem wall. Continuously operated mechanical exhaust and perimeter wall insulation or conditioned air supply and insulation must be provided.
- Note the ground level so that the correct type of flooring and system can be specified for the job.

- Engineered floors can be appropriate for above-ground, on-ground and below-ground installations.
- Solid wood flooring can be appropriate for above- ground and ground level installations, but not for below ground installations.
- If the soil surrounding a structure is 75mm or more above the floor of any level, consider that level below ground. This includes walk-out basements. In addition, the surrounding soil should be sloped away from the structure.
- Where the minimum jobsite conditions are present, the flooring can be delivered and stored in the rooms in which it will be installed.

Additional jobsite conditions for pre-finished flooring

- All finished wall coverings and painting should be completed. Note: Skirting or finish and shoe mould may be installed and finished after the flooring installation.
- After installation, if you choose to protectively cover the floor, cover the floor completely with a floor protection product, since some species are light-sensitive and uncovered areas may change colour. However, covering a glue-down application may not allow some adhesives to properly cure. Follow the flooring and adhesive manufacturer's recommendations. Use a covering material that is vapour permeable to avoid trapping moisture/vapour on or within the floor. A common reinforced builder's paper is a good choice. Any covering should be taped, using a low-adhesion tape, to base or shoe mouldings. Avoid taping to the finished flooring. When taping paper or sheets together ensure they are taped to each other and not to the floor.

Acclimatisation

Floors must be acclimatised

- 10mm engineered floors must be acclimatised for 2-3 days
- 15mm engineered floors must be acclimatised for 2-3 days
- 20mm engineered floors must be acclimatised for 2-3 days
- Solid wood floors must be acclimatised for 2-3 days

Ted Todd recommends that all floors are acclimatised within their packs for 2 to 3 days in the room to be installed to allow the temperature of the floor to equalize with its environment ensuring job site conditions are met.

Ensure that the building is enclosed.

Verify that the building is maintained at normal living conditions for temperature and humidity. Where building codes allow, permanent heating and/or air-conditioning systems should be operating at least five days preceding installation to promote proper acclimatisation.

If it is not possible for the permanent heating and/or air-conditioning system to be operating before, during and after installation, a temporary heating and/or dehumidification system that will mimic normal temperature and humidity conditions can enable the installation to proceed until the permanent heating and/or air-conditioning system is operating.

Packs should be stacked flat on the floor or on battens (not upright) allowing for airflow around the stacks

If the delivery is for more than one room the order should be broken down into the individual room quantities and stored in the respective rooms.

Acceptable subfloors

Floors can be installed over a variety of sub floors, please refer to the relevant sections for minimum sub floor specifications:

- Joists
- Solid boards
- Tiles
- Concrete screed
- Panel product subfloors
- Mixed subfloors

Subfloor flatness and integrity

Subfloors must be flat to within 3mm in 2m radius, clean, dry, structurally sound, free of squeaks and free of protruding fasteners.

If peaks or valleys in the subfloor exceed the tolerances specified above, level with approved material for use under wood flooring. However, it is the builder's or general contractor's responsibility to provide the wood-flooring contractor with a subfloor that is within the tolerances listed above.

Inspect the subfloor carefully. If there is movement or squeaks in the subfloor, refasten the subfloor to the joists in problem areas.

Protruding fasteners are easily remedied by driving those fasteners deeper into the subfloor.

Subfloor moisture

Always check moisture content of wood flooring on both sides before installing.

Ensure moisture content of subfloor/substrate meets the appropriate industry standard for the finish flooring material to be installed.

For wood subfloors there should be no more than 2% difference in moisture content between wood flooring and subflooring materials.

For concrete screeds moisture content should not exceed 2% CM Moisture content.

Moisture testing

It is imperative all sub floors are tested for moisture prior to bringing the flooring into the property. This should include recording of all measurements taken including; the date, relative humidity, ambient temperature, the type of meter along with a plan of test locations

Ensure jobsite conditions are met prior to conducting moisture testing

NOTE: All tests give a result at the time the test is done. In general they give you the ability to start or not start a job. These tests do not give a permanent condition of your substrate merely an "at the time the test was performed" indication.

The use of vapour retarders reduces the potential moisture related problems; Ted Todd recommends the use of vapour retarders with all installations.

Moisture testing in wood subfloors

Test for moisture at several locations in the room, a minimum of 20 points per 93 square meters averaging the results.

Test for moisture using an electrical resistance moisture meter, ensuring tests are taken with the moisture probes placed in line with the grain.

Target moisture content of wood sub floor should not exceed 12% or be greater than 2% of the moisture content of the floor

A high reading in one area indicates a problem that must be corrected. Pay special attention to exterior walls and plumbing.

Ted Todd recommend using Sisalkraft 728 Builders paper for all nail down installations and Ted Todd Universol or Ted Todd Floorfix Float Professional underlay with taped seams for all floated installations over wood sub floors.

The vapour retarders have some extra benefits in that it eliminates wood-on-wood contact, planks slide more easily when positioning, minimizes the impact of seasonal humidity change and may reduce dust and noise levels.

Over a wood subfloor, do not use an impermeable vapour retarder material such as 1000 gauge polyethylene film or other polymer materials, as it may trap moisture on or in the wood subfloor.

Moisture testing in concrete subfloors

There are several types of test for measuring the moisture content of a concrete screed

- Concrete Encounter (MC) - Non-destructive, very quick, surface test
- Calcium Carbide Test (CM) - Destructive, quick and very accurate
- Relative Humidity (RH) - Non-destructive, slow but very accurate

Each test has its advantages and disadvantages. British Standards 8201:2011 recommends using relative humidity (RH) testing of concrete sub floors however to comply with requirements set by the installation products Ted Todd recommends testing using the calcium carbide method.

Before moisture testing begins, the concrete slab must be a MINIMUM of 30 days old. Select test locations to provide information about moisture distribution across the entire concrete floor slab. For slabs on ground and below ground, include a test location within three feet of each exterior wall.

Perform 10 tests for the first 93 sq m and one test for every additional 93 sq m thereafter. The actual test area shall be clean and free of all foreign substances. Use approved work practices for removal of all existing flooring materials and debris.

Target moisture content of concrete screed should not exceed 2% (CM)

A high reading in one area indicates a problem that must be corrected. Pay special attention to exterior walls and plumbing.

Always follow the meter manufacturer's instructions.

If using Relative Humidity testing any readings should not exceed 75% RH.

Ted Todd recommends using Ted Todd Primerfast liquid damp proof membrane (LDPM) prior to ALL glue down installations and Ted Todd Universol or Ted Todd Floorfix Float Professional underlay for ALL floated installations.

If the calcium carbide Method test gave a reading of greater than 2% (CM) moisture reading but no more than 5%, with a 60mm thick screed or less, using Ted Todd Primerfast liquid damp proof membrane can allow you to continue with the installation. If measurements are out side of these parameters do not bring the floor onto site.

When using Ted Todd Universol or Ted Todd Floorfix Float Professional underlay all seams must be taped with Aluminum Tape.

If the installation is over water fed under floor heating system do not use Ted Todd.

Primerfast. One coat can be used if required to seal a loose screed.

For all floated installations over under floor heating use Ted Todd Universol Underlay with taped seams.

Panel product subfloors

1. Subfloor must be flat

Make sure the panels are flat to within 3mm in 2m radius. If the panels are out of specification, consider sanding. When sanding, care must be taken to minimize the amount of dust produced. Best practice would include using dust-collection devices. Approved respirators should also be used to minimize the amount of dust inhaled.

2. Subfloor must be dry

For more information, please see moisture testing.

3. Specification

For panel products subfloors, check for loose panels and re-nail or screw down loose panels securely.

Ensure that there is proper expansion space (3mm) between the panels. If the subfloor panels are not tongue-and-grooved and if there is not sufficient expansion space, use a circular saw to create the specified space. Do not saw through joints on T&G subfloors.

Also check for delaminated or damaged areas and repair those areas as needed. Make sure the subfloor is free of debris before beginning installation.

Acceptable panel subfloors: Building regulations A structure:

On truss/joist spacing of 406mm o/c or less, the industry standard for single-panel subflooring is nominal 15mm CD Exposure 1 Plywood subfloor panels (Class 1 EXPOSURE 1) or 18mm OSB Exposure 1 subfloor panels, 1200mm X 2400mm sheets.

On truss/joist spacing of more than 406mm up to 488mm o/c, the standard is nominal 19mm T&G Class 1 EXPOSURE 1 Plywood subfloor panels, (Exposure 1), 1200mm X 2400mm sheets, glued and mechanically fastened, or nominal 19mm OSB Exposure 1 subfloor panels, 1200mm x 2400mm sheets, glued and mechanically fastened.

Truss/joist systems spaced over more than (488mm) o/c up to a maximum of (610mm) require nominal 22mm T&G Class 1 EXPOSURE 1 Plywood subfloor panels, (Exposure 1), 1200mm X 2400mm sheets, glued and mechanically fastened, or nominal 25mm OSB Exposure 1 subfloor panels, 4' x 8' sheets, glued and mechanically fastened or two layers of subflooring. Or brace between truss/joists in accordance with the truss/joist manufacturer's recommendations and with recognised building codes. Some truss/joist systems cannot be cross-braced and still maintain stability.

For double-layer subfloors, the first layer should consist of nominal 19mm class 1 Exposure 1 Plywood subfloor panels , 1200mm X 2400mm sheets or nominal 19 OSB Exposure 1 subfloor panels, 1200mm' x 2400mm sheets. The second layer should consist of nominal 12mm class 1 EXPOSURE 1 plywood subfloor panels,

(Exposure 1) 1200mm X 2400mm sheets. The 12mm plywood should be offset by 12mm panel in each direction to the existing subflooring. The panels may also be laid on a diagonal or perpendicular, with 3mm spacing between sheets. Nail on a 305mm minimum grid pattern, using ring-shank nails or staples.

4. Fastening and Spacing Specifications

Follow the panel manufacturer's recommendations for spacing and fastening.

Typical panel spacing and fastening requirements for truss/joist systems call for a 3mm expansion space around the perimeter of each panel, with panels fastened every 300 mm along intermediate supports.

Edge swell should also be flattened. This can usually be accomplished by using an edger sander.

Solid subfloors

1. Subfloor must be flat

Make sure the boards are flat to within 3mm in 2m radius. If the boards are out of specification, consider sanding. When sanding, care must be taken to minimize the amount of dust produced. Best practice would include using dust-collection devices. Approved respirators should also be used to minimize the amount of dust inhaled.

2. Subfloor must be dry

For more information, please see moisture testing.

3. Specification

Solid board sub flooring should be: 19.05mm x 140mm (1x6 nominal), Group 1 dense softwoods (SYP, Doug Fir, Larch, etc.), No. 2 Common, kiln-dried to less than 15% MC.

Solid-board subfloors should consist of boards no wider than 150mm, installed on a 45 degree angle, with all board ends full bearing on the joists and fastened with minimum 8d rosin-coated or ring-shanked nails, or equivalent.

Some types of wood flooring should not be installed directly over solid-board subflooring:

15mm solid and engineered flooring must have a 12mm or better plywood underlayment installed over solid board subflooring.

Parquet flooring cannot be installed directly to solid-board subfloors. A parquet installation over solid-board subflooring requires 9mm or better underlayment panels, nailed on 150mm minimum grid pattern using screws, ring-shanked nails or staples.

Joists

Only acceptable for 20mm solid or engineered floors

1. Subfloor must be flat

Make sure the joists are flat to within 3mm in 2m radius

2. Subfloor must be dry

For more information, please see moisture testing.

3. Specification

Joists must have centres at no more than 450mm. If outside of this parameter, refer to panel product sub floors

Tiled Subfloors

1. Subfloor must be flat

Make sure the tiles are flat to within 3mm in 2m radius

2. Subfloor must be dry

For more information, please see moisture testing.

3. Specification

Engineered and solid flooring can be installed directly over existing ceramic tile, terrazzo, marble and granite.

Concrete Subfloors

1. Subfloor must be flat

Make sure the concrete slab is flat to within 3mm in 2m radius.

If the slab is out of specification, consider grinding, floating or both. Many high spots can be removed by grinding, depressions can be filled with approved leveling compounds, and slabs can also be flattened using a self-leveling concrete product.

When sanding or grinding concrete, care must be taken to minimize the amount of silica dust produced. Best practice would include using dust-collection devices, or applying water to the concrete before sanding. Approved respirators should also be used to minimize the amount of silica dust inhaled.

2. Subfloor must be dry

For more information, please see moisture testing.

3. Slab must be:

Minimum 3000 psi.

Free from non-compatible sealers, waxes, and oil, paint, drywall compound etc.

Check for the presence of sealers by applying drops of water to the slab, if the water beads up, there may be sealers or oils.

Do not attempt to glue a wood floor over a chalky or soft concrete slab.

Burnished, slick steel-trowel slabs and power floated slabs may require screening with a 30-grit abrasive and using Ted Todd Primerfast as a primer.

4. Specifications for lightweight concrete

Make sure the concrete is well bonded to the sub-floor. Check for hollow spots, cracks and loose areas.

As with on-ground concrete sub-floors make sure the concrete is clean, flat to specification and dry.

Over lightweight concrete (less than 3000 psi), only float engineered floors directly over the sub floor.

Rule of thumb: Draw a nail across the top; if it leaves an indentation, it is probably lightweight concrete.

For wide solid boards a ply sub floor can be installed over a concrete screed.

Nominal 15mm Class 1 Exposure ply wood sub floor panels.

Mixed Subfloors

For areas with mixed sub floors, most commonly extensions where by the ground floor has a suspended floor and the room is extended with a concrete screed it is important to level the entire area and to ensure the ridge between the two areas is removed.

Only use one fitting method to install the floor in the area unless the floor is separated by the use of a T section at the join of the subfloors.

The best way to install the floor is to ply the entire area (see Panel Products Subfloors) and either nail or glue the flooring to the ply.

Refer to moisture testing section to ensure the tolerance for moisture is met and the correct use of vapour retarders for each area.

Fitting a parquet or panel wood flooring

1. Site Checks

Before commencing installation ensure the requirements have been met for Jobsite Conditions, Moisture Testing, and Acclimatisation.

2. Acceptable Subfloors

For full information, please refer to 'acceptable subfloors'.

Parquet can be laid over concrete or solid panel subfloors.

Parquet cannot be installed directly on to solid board subfloors. A parquet installation over solid-board subflooring requires 12mm or better underlayment panels.

3. Installation Guidelines

Parquet is recommended for glue down installation using Ted Todd MS Flex only.

Ensure Ted Todd Primerfast Vapour retarder has been applied unless with the use of underfloor heating.

A minimum expansion space of 15mm must be left around the perimeter and all vertical obstructions.

Please refer to Ted Todd's MS Flex and Primerfast data sheets for more information.

4. Parquet layouts

Parquet can be laid in many different designs, and considerations to the design you require will affect how you begin your installation.

The different laying methods include 'Square layout from the centre of the room', 'installation of herringbone using square or diagonal layout', and 'square layout from the wall'. Further details of these installation methods can be requested from our sales team.

N.B. To find the centre of the room please use the Trammel Point Method.

Fitting engineered wood flooring

If you are fitting an engineered wood floor with underfloor heating, please check the relevant underfloor heating guide.

1. Site Checks

Before commencing installation ensure the requirements have been met for Jobsite Conditions, Moisture Testing, and Acclimatisation.

2. Acceptable Sub Floors

- Concrete
- Panel
- Plank
- Joists (20mm only)
- Tiles

3. Acceptable fitting methods

- Glued
- Floated
- Nailed (20mm only)

4. Installation Guidelines

Choose a starting wall according to the most aesthetically or architecturally important elements in the room, taking into consideration fireplaces, doors, cabinets and transitions, as well as the squareness of the room. The starting wall will often be the longest unbroken wall in the room.

Engineered wood floors can be glued or floated to the existing sub floor. 20mm thick wood floors can be nailed to timber sub floors.

Ensure a vapour retarder has been applied unless with the use of under floor heating.

Careful attention must be paid to the maximum area of the installation.

Do not float engineered floors where the dimension of an installation area exceeds 6m in width and 10m in length. If these dimensions are exceeded glue the flooring using Ted Todd's MS Flex adhesive.

For glue or nail installations where the maximum width exceeds 8m, extra expansion should be allowed in between the rows of the boards allowing 1mm of extra expansion for every meter exceeding the maximum width. For example a 10m wide room will require an extra 2mm of expansion distributed across the floor.

Where possible, expansion gaps must be left though doorways/archways and covered with T sections to break up large areas of installation and a minimum expansion space of 15mm must be left around the perimeter and all vertical obstructions.

Distribute lengths of planks, avoiding —Hll patterns and other discernible patterns in adjacent runs.

For multi-ply engineered flooring there is frequently a bow within the board. This can be up to 25mm and therefore it is important to ensure that the first rows are laid with the boards being interlocked to around half of the length. This will ensure the boards lie flat and permit installation.

5. Glue Down Installation

Unless there is water fed under floor heating system installed apply 2 coats of Ted Todd Primerfast liquid damp proof membrane.

Tiles will require to be abraded and quartz crystals applied to the wet Ted Todd Primerfast before installation.

Snap a working line parallel to the starting wall, the width of the board, plus the tongue and recommended expansion space.

Install a starter board along the edge of the working line and begin installation.

Alternatively, lay one row of plank in Ted Todd MS Flex along the length of the working line and allow curing before starting the installation.

Please refer to Ted Todd MS Flex and Ted Todd Primerfast data sheets for more information.

Spread the adhesive as instructed up to and along the working line. Use tensioners to maintain a tight floor.

6. Nail Down Installation

Only 20mm thick engineered wood floors can be nailed.

This can be over any wood subfloor, see acceptable subfloors for more information.

Our 20mm floor are ends matched, when installing over joists at 450mm centers there is no requirement to support head joints on a joist for normal domestic installations. If heavier point loading is expected all header joints should be supported.

If installing over a solid subfloor, planks must be laid at 45 or 90 degrees to sub floor boards or add a layer of minimum nominal 12mm Class1 plywood underlayment to the existing subfloor.

Always use Sisalkraft underlay with all nail down installations, overlapping the seams by a minimum of 100mm and returning up the wall.

Snap a working line parallel to the starting wall, allowing 15mm expansion space. Lay one row of plank along the entire length of the working line.

Top-nail and blind-nail the first row (hand-nail if necessary), using appropriate fasteners. Denser species may require pre-drilling. Each succeeding row should be blind-nailed wherever possible.

- a. Joists subfloors – Blind nail in each joist
- b. Plank or Panel subfloors – Nail every 200 – 300mm

During installation of flooring, push or gently tap boards flush to the previous row. Tap against the tongue; tapping the groove may damage the edge. To prevent damage to the finish, avoid tapping the face of the board with a rubber mallet.

7. Floating Installation

Do not install fixed items over floated engineered floors i.e. kitchen units or islands.

Do not float engineered floors where the room dimensions exceed 6m in width. Follow glue down installation method.

Install acceptable vapor retarder, taping all seams with aluminum tape.

Use Ted Todd Universol underlay over under floor heating systems.

Ted Todd Floor Fix Float Professional underlay with all other systems.

Apply Ted Todd T&G Adhesive to top of tongue on lengths of boards and head joints ensuring the boards are clamped while the glue is left to cure

Fitting solid wood flooring

Do not install solid wood floors over under floor heating systems.

Do not install solid plank flooring in pre 1960's properties where the screed sub floor is in direct contact with the soil.

1. Site Checks

Before commencing installation ensure the requirements have been met for Jobsite Conditions, Moisture Testing, and Acclimatisation.

2. Acceptable Subfloors

- Concrete
- Panel
- Plank
- Joists (20mm only)

3. Acceptable fitting methods

- Glue
- Nail

4. Installation Guidelines

Choose a starting wall according to the most aesthetically or architecturally important elements in the room, taking into consideration fireplaces, doors, cabinets and transitions, as well as the squareness of the room. The starting wall will often be the longest unbroken wall in the room.

Solid wood floors can be glued directly to the sub floor. 20mm floors can be nailed to timber subfloors.

For glue or nail installations where the maximum width exceeds 8m, extra expansion should be allowed in between the rows of the boards allowing 1mm of extra expansion for every meter exceeding the maximum width. For example a 10m wide room will require an extra 2mm of expansion distributed across the floor

Where possible expansion gaps must be left though doorways/archways and covered with T sections to break up large areas of installation and a minimum expansion space of 15mm must be left around the perimeter and all vertical obstructions.

Distribute lengths, avoiding —Hll patterns and other discernible patterns in adjacent runs. Stagger end joints at least three times the width of the boards, as product allows.

5. Glue down installation

Apply 2 coats of Ted Todd Primerfast liquid damp proof membrane before all installations over concrete screeds.

If the boards are over 160mm wide it is necessary to nail and glue the floor. If the installation is over a concrete screed, a ply sub floor will be required to be installed prior to installation (see acceptable panel subfloors for more information).

Tiled sub floors will require abrading and quartz crystals applied to an application of wet Ted Todd Primerfast before installation.

Snap a working line parallel to the starting wall, the width of the board, plus the tongue and recommended expansion space.

Install a starter board along the edge of the working line and begin installation.

Alternatively, lay one row of plank in Ted Todd MS Flex along the length of the working line and allow to cure before starting the installation.

Please refer to Ted Todd MS Flex and Ted Todd Primerfast data sheets for more information.

Spread the adhesive as instructed up to and along the working line. Use tensioners to maintain a tight floor.

6. Nail down installation

Only 20mm thick solid wood floors can be nailed. If the boards are over 160mm wide it is necessary to nail and glue the floor. If the installation is over a concrete screed a ply subfloor will be required to be installed prior to installation.

Our 20mm floor are ends matched, when installing over joists at 450mm centers there is no requirement to support head joints on a joist for normal domestic installations. If heavier point loading is expected all header joints should be supported.

If installing over a solid subfloor, planks must be laid at 45 or 90 degrees to sub floor boards or add a layer of minimum nominal 12mm Class1 plywood underlayment to the existing subfloor.

Always use Sisalkraft underlay with all nail down installations. Overlapping the seams by min 100mm and returning up the wall

Snap a working line parallel to the starting wall, allowing 15mm expansion space. Lay one row of plank along the entire length of the working line.

Top-nail and blind-nail the first row (hand-nail if necessary), using appropriate fasteners. Denser species may require pre-drilling. Each succeeding row should be blind-nailed wherever possible.

- a. Joists subfloors – blind nail in each joist
- b. Plank or panel subfloors – nail every 200-300mm

During installation of flooring pieces, push or gently tap boards flush to the previous row. Tap against the tongue; tapping the groove may damage the edge. To prevent damage to the finish, avoid tapping the face of the board with a rubber mallet.

For wide rooms in excess of 6 meters use the following installation method.

Find the center of your room, measuring off the two longest walls, and snap a line down the center of that room.

Install a starter board on the line. Fasten the starter board to the floor using wood screws. Nail the first row of wood flooring against the starter board, being careful not to move the starter board when nailing. The groove of the flooring should be against the starter board.

Drill and hand-nail the first three rows through the tongue. DO NOT USE TOP NAILS.

Use a blind nailer to install the remaining rows of wood flooring. Use the nailing practices described earlier in the chapter.

After installing in one direction, remove the starter board and start rows going in the opposite direction.

Install a false tongue in the groove of the board that was against the straight- edge. Put wood glue down the entire length of the groove before installing the tongue.

Install the remaining rows in the opposite direction. Use the nailing practices described earlier.

Underfloor heating

1. General Guidelines

Thermal resistance of wood varies with the species but is in the order of 0.13m² K/W. Wood naturally reduces heat transfer through the whole floor construction and thus wood flooring should only be considered over an underfloor heating installation with full prior consultation with the heating engineer.

All of our engineered floors are suitable for installations with under floor heating systems. You must check with the manufacturer of the underfloor heating system to ensure that the system can be properly controlled to ensure the maximum temperature at the surface of the timber floor (at any point) will not exceed 27°C.

It is important that you set the underfloor heating system to make sure that it cannot in any circumstance cause a floor surface temperature that exceeds 27°C. The best way to do this is with an infrared heat monitor. These are inexpensive and will allow you to calibrate the maximum running temperature of your heating system.

For water systems this is easily achieved by adjusting the regulator to a maximum water temperature that is commensurate with a floor temperature of 27°C.

For electric systems you will also need to set up the system so it is impossible for the floor temperature to exceed 27°C.

Please note that the 27°C is across the whole floor and it is common for poorly installed systems to have hot spots. The calibration of both water and electric systems needs to be measured against the hottest areas in the floor.

Please also note that underfloor heating systems are designed to operate as a “slow” heating source. The appeal is that they emit an even level of heat over a long period of time. The only circumstances within most properly insulated homes that a temperature of 22°C cannot be achieved with a floor temperature of 27°C is when the 22°C is demanded too quickly. In this respect if you use an underfloor heating system like a conventional radiator, you will damage your floor as the short term temperature boost will cause excessive temperature in the floor.

Please note that room temperature settings are NOT floor temperature settings.

The temperature of the floor only needs to exceed 27°C for a short period of time to damage your floor.

Early signs that your heating system is running too hot include: colour fade in the floor’s natural tone, and/or small longitudinal splits along the centre and ends of a plank (this is normally prevalent around knots).

If corrective action is not put in place quickly the hardwood layer in your floor will start to shrink. When this happens the hardwood layer will curl up at the edges. In extreme circumstances the dried out hardwood layer will move to such a degree that it becomes loose and will start to delaminate from the backing layer. When dried out hardwood layers become loose they will normally need to be replaced, however in some circumstances the wear layer can be glued back into place (the additional use of a micro nail gun will hold the boards in place whilst the glue dries).

Replacing wear layers is a professional undertaking and requires the removal of either the entire plank from the floor or in some circumstances the removal of the hardwood wear

layer. This can sometimes be undertaken without damaging the finish on the floor. However if the floor does not have bevels between each component, the floor will need to be refinished. The re-finish could be straight forward and only involve a light sand to the existing finish and then the application of additional coats of finish. In some circumstances the floor will need sanding back to bare wood prior to re-finishing.

Please note that all Ted Todd engineered wood floors are tested for adhesive bond strength. The bond performance between the hardwood layer and core meets all European standards. Wood floors that fail over underfloor heating fail due to shrinkage in the hardwood layer of the board and not due to poor adhesion.

Where possible we recommend that all floors are glued to the subfloor with Ted Todd MS Flex adhesive but this will depend on the system and subfloor you have chosen. Please ensure the sub floor is rated to allow direct gluing of timber floors.

The ambient humidity and temperature should all ways be maintained.

Do not lay rugs/large items that will trap the heat over floors with under floor heating systems as this can cause excessive drying of the timber.

Some electric underfloor heating systems are not suitable for installations with timber flooring, check with the manufacturer that the system will adhere to the above criteria.

2. Water Fed Systems

The under floor heating installer must ensure that all services running beneath the floor have been fully tested before laying start.

Once the screed is dry (see 'moisture testing' for full specification), and prior to installation follow heat up procedure as follows:

Day 1: 20°C

Day 2 - 30°C

Day 3 - 40°C

Day 4 - 50°C or the maximum planned operating temperature and maintained constantly for 7 days

Day 12 - 40°C

Day 13 - 30°C

Day 14 - 30°C

Day 15 – Switch off heating system

Allow 4 days before a final moisture reading is taken.

If more than 7 days elapse between the last cooling down day and the start of laying the flooring, the under floor heating system should be run at minimum operating temperature for 2 days. The system should then be switched off for at least 4 days before a further moisture check is carried out prior to laying.

Once this has been completed, moisture checks agree with recommendations and your subfloor is suitable for glue down installation, follow guidelines for glue down installation. If your sub floor is not suitable for glue down installation follow guidelines in Chapter 6.3.3 Floating Installation

3. Electric Systems

Some electric underfloor heating systems are not suitable for installations with timber flooring, check with the manufacturer that the system will adhere to the general guidelines.

If the system is suitable follow the guidelines for floating installation.

4. Heating systems over suspended floors

For installations where the underfloor heating is suspended in joists or an overlay system, consult your supplier of the heating system to ensure it is rated for use with engineered wood floors and follow their installation instructions.

Always follow our general guidelines for underfloor heating and check joist spacing as per our acceptable subfloors section.

Profiles and mouldings used with wood floors

Wood floors require expansion space at the wall and all vertical obstructions. Mouldings are used to cover the expansion area, to hide cut ends, to adjust height differences or transitions between floors and to aesthetically finish the area.