

BAMBOO & EUCALYPTUS FLOORING

INSTALLATION INSTRUCTIONS

Please read this entire document carefully before proceeding with the installation of your flooring.

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BEFORE INSTALLATION BEGINS

The NWFA has put together a job site checklist for you or your installer to fill out before, during, and after the installation of your new flooring. It's a great way to ensure the installation goes smoothly and can be filed away to use as a reference in the future. Download and print the checklist here: <https://nwfa.org/wp-content/uploads/2020/03/JobSite-Checklist2.pdf> The installer avoids using it at their own risk.

Important Information To Know Before You Begin

When your bamboo or eucalyptus flooring is ordered, approximately 7% to 10% should be added to the actual square footage needed as allowance for cutting and waste.

Our flooring products are quality inspected before packaging and shipping. Nevertheless, the installer must use reasonable selectivity (common sense) to hold out, relocate in hidden places, or cut out pieces with glaring defects, whatever the cause. Installation of any material serves as acceptance of that material and the Manufacturer will not accept responsibility for flooring installed when it has visible defects. Should an individual flooring plank be doubtful as to grade, manufacture, milling, or factory finish, the installer should not use that piece. Ensure adequate lighting for proper inspection.

It is the installer's responsibility to ensure a snug fit between all planks via the use of a racking system or a block and tap method, to ensure that flooring planks fit tightly together on all sides. If the installer is not able to achieve a tight fit between planks they should remove them and attempt a tighter fit with new plank(s).

When using installation accessories such as adhesives, underlays, etc, the installer must read each accessory product's label requirements & installation guidelines prior to installation to ensure they are using such accessory product as per the manufacturer guidelines. Issues arising from the failure to follow the instructions and requirements on accessory products are the responsibility of the installer.

Do not discard carton packaging in the event that you need to return flooring. We only accept returns in original packaging.

The only tape approved for use on hardwood/bamboo floors and moldings is 3M/Scotchguard #2080 tape. **Do not use any other tape (including blue painter's tape) as it may cause finish to peel.** Regardless of which tape you use, do not leave the tape on any finish surface for more than 6-10 hours or it will damage the finish.

All of our solid tongue and groove floors must be either nailed down or glued down (ensure to read about required tools and adhesives further down in this document). Solid floors are not covered by warranty if installed via a floating method.

If you're gluing down the floor, we **highly recommend that you purchase adhesive remover wipes** and use them to wipe off the glue as you're installing the floor. If the glue cures on top of the finish it may be impossible to remove without damaging the finish, which will result in having to cut out and replace the affected planks.

The use of paint thinner, mineral spirits, turpentine and certain abrasive chemicals may irreparably damage the finish. Ensure to test all cleaning agents on a sacrificial plank prior to use.

Do not cover the floors with construction paper or plastic for extended periods of time. Construction paper and other protective floor coverings have the potential to cause discoloration in wood and bamboo & eucalyptus floors due

because they result in uneven light absorption. Plastic membranes may cause a build-up of humidity and can result in cupping or other moisture imbalance problems.

Important Note About Storing Boxes/Planks:

- Keep the flooring sealed in its original boxes with protective plastic wrap until approximately 3–5 days before installation.
- Begin acclimation only after the building's climate control systems are operational and the indoor environment reflects the conditions the floor will experience long-term.
- Do not cut open boxes prematurely or leave planks exposed outside the boxes for extended periods, as this can lead to warping, cupping, or other dimensional issues.
- When ready for installation, cut open the boxes and plastic on 3 sides, or remove the planks from the boxes, and allow them to acclimate for the recommended 3–5 days under controlled indoor conditions.

As with all wood floors, it is the end-user's responsibility to maintain appropriate humidity levels between 35%-55% during acclimation, installation and post-installation via the use of a humidifier and/or de-humidifier if needed.

Bamboo & eucalyptus flooring is a living material which is hygroscopic and therefore reacts to changes of relative humidity and consequently, its dimensions will change. The boxes must be cut open exactly as per the guidelines in the Acclimation section further down this document.

Very Important: the ***cut ends*** of planks should only be placed at the edges of the installation and should be covered by perimeter moldings like baseboard or quarter round to prevent them being walked on. When a plank is cut on its sides or ends the exposed/cut edge is not warranted for foot traffic as it is not finished. Only full planks with micro-beveled edges on all 4 sides should be laid in areas experiencing foot traffic.

IMPORTANT NOTE ABOUT FLOATING BAMBOO FLOORING: Floating wood floors require stable interior humidity settings that do not fluctuate more than 20% year around. As a general rule, if the installation is in a geographic area that experiences the four seasons and there is no humidity control built into the climate control system, the homeowner/installer must use humidifiers/dehumidifiers or follow the limitations set forth below.

- **FLOATING click lock engineered floors** – If your interior humidity settings will fluctuate more than 20% in a given year, your successive runs of flooring should not exceed 25 ft across the widths of the planks and 45 ft down the lengths of the planks. For our rigid core bamboo flooring (SPC core), the run limits are 40 ft x 50 ft.
- **FLOATING click lock solid floors** - If your interior humidity settings will fluctuate more than 20% in a given year, your successive runs of flooring should not exceed 18 ft across the widths of the planks and 35 ft down the lengths of the planks.
- **FLOATING tongue and groove solid floors** – Many installers float our solid tongue and groove floors to great success, however due to the failures of some installers to apply glue properly within the grooves of the planks, we no longer provide a warranty for floating solid tongue and groove floors. If you decide to install in this manner, ensure your runs don't surpass 15 ft wide x 25 ft long, ensure to use a thick enough bead of glue to secure the planks, and use finish-safe tape to hold the planks tightly together until the glue dries.

Jobsite Requirements

Prior to installation of any flooring, the installer must ensure that the jobsite and subfloor meet the requirements of these instructions. The manufacturer is not responsible for floor failure resulting from unsatisfactory jobsite and/or subfloor conditions or failure to assess the situation properly.

- Manufacturer flooring should be one of the last items installed on any new construction or remodel project. All work involving water or moisture should be completed before floor installation.

- Room temperature and humidity of installation area should be consistent with normal, year-round living conditions for at least a week before installation.
- A room temperature of 60 degrees to 80 degrees Fahrenheit and humidity range of 40% to 60% are required.

Hardwood flooring should be one of the last items installed on any new construction or remodel project. All work involving water or moisture should be completed before floor installation.

Our engineered flooring is acceptable for below-grade installation and basements. In this scenario, engineered flooring can be installed in a floating method over a vapor barrier underlayment, or glued down to concrete using an adhesive with vapor barrier. Our solid flooring is not recommended, nor warranted, for installation in basements.

Important Note About Crawl Spaces: Cupping in wood floors is a common result when a crawl space is not properly sealed. If you have a crawl space under your home or new flooring, you must properly remedy this moisture.

- There must be a ground layer cover of 6 to 20 mil BLACK polyethylene film with joints overlapping at least 6 inches, and sealed with moisture-resistant tape, or any recommended puncture-resistant membrane, such as Class C, meeting ASTM D-1745.
- There must be a minimum of 18" from the ground to underside of joists and it should have perimeter venting equal to at least 1.5% of the crawl space total square footage. The vents should be properly placed for cross-ventilation.

Important Note About Installing Over An Unconditioned Space Such as a Garage: Subfloor moisture penetration of improperly sealed sub-floors over unconditioned spaces is a common cause of wood floor failure. If you are gluing the floor down over such a space, you must use a 100% urethane adhesive that contains a moisture barrier, with an upper moisture limit that is suitable for the level of moisture being emitted through the sub-floor. If you are nailing the floor down over such a space, you will need to follow these steps:

- In an unfinished space, staple a 6 mil plastic sheet to the ceiling of the unconditioned space with joints overlapping at least 6 inches, and seal the edges and nail holes with moisture-resistant tape. In a finished space, coat the ceiling with two layers of high-gloss paint.
- Lay down two layers of 15 lb asphalt saturated felt paper at a 90 degree angle to each other over the plywood before beginning the nail down installation. Be careful not to overlap the rolls as this may cause an un-level surface. Once the first layer is down, install the second layer at a 90 degree angle and care not to overlap.

A note about chevron cut floors: Chevron production is inherently more complex than straight-lay hardwood. The end tongue and groove cuts are not fully processed on our milling machines, because each board must be fed at a 45 degree angle. This requires manual positioning and securing by workers, which introduces more variability than fully automated milling. Because of this, all chevron flooring typically carries a slightly wider acceptable tolerance on length compared to traditional hardwood, and the industry generally assumes an extra 1 to 2 percent of waste for boards at the outer edges of the tolerance range. A tolerance approaching 2 mm is not unusual, but should appear on isolated boards rather than the full batch. Those pieces are usually discarded or used as starter planks during installation. Also, because the corners on chevron planks are sharp, a handscraped finish can round those edges slightly, which sometimes makes the measurements appear off when they are not.

Acceptable Subfloor Types

****The table below refers to the installation of solid tongue and groove bamboo/wood flooring. If you are installing a floating wood/bamboo floor, the only requirements are that the sub-floor be level, clean and dry (or a valid 3 in 1 vapor underlayment is used to mitigate sub-floor moisture), and that you follow any run limit requirements that may**

apply in installations with high humidity variation throughout the year (details in “FLOATING INSTALLATIONS” section below).

ACCEPTABLE SUBFLOORS

TYPE OF SUBFLOOR	GLUE?	NAIL?
Concrete	✓	✗
Gypcrete	if sealed** first	✗
OSB [3/4" min.]*	✓	✗
Advantech OSB	✓	✓
Plywood [5/8" min.]*	✓	✓
Particle Board	✗	✗
Existing Wood Floor	if sanded first	if 3/4" thick
Asphalt Tile	✗	✗
Firm Linoleum	✗	if over plywood
Firm Kitchen Vinyl	✗	if over plywood
VCT Vinyl Tiles	✗	✗
Steel	✓	✗
Ceramic/Marble	if scuffed first	✗
Cushion Vinyl	✗	✗
Cement Board/Backer/CBU	✓	✗
Rubber Tiles	✗	✗

*Floor joist 16" OC

**With acrylic-based sealer

SUBFLOOR TYPE	Nail Down?	Glue Down?
CONCRETE	no	yes
GYPCRETE**	no	yes, apply acrylic based sealer first
OSB 3/4" min (floor joist 16" oc)	no	yes
Advantech OSB	yes	yes
PLYWOOD 5/8" min (floor joist 16" oc)	yes	yes
PARTICLE BOARD	no	no
EXISTING WOOD FLOORS	yes, if 3/4" thick	yes, requires light sanding first
ASPHALT TILE	no	no
FIRM LINOLEUM	if over plywood	no

FIRM KITCHEN VINYL	if over plywood	no
VCT VINYL TILES	no	no
STEEL	no	yes
CERAMIC/ MARBLE	no	may need to be scuffed first
CUSHION VINYL	no	no
HARDY/CEMENT BOARD/BACKER/CBU	no	yes
RUBBER TILES	no	no

**Occasionally Gypcrete has a layer of debris that floats to the surface while being poured. This is usually obvious and if it occurs will need to be removed with coarse open grit paper on a buffer until a solid surface is reached. You will then use a diluted coat of acrylic primer to seal the surface; however it must soak in and not leave a film. Once the gypcrete is prepped and primed you can proceed with a normal installation.

Note about engineered floating floors: engineered floating floors can be installed on, above and below grade, and the only sub-floor requirement is that the surface be dry, firm, and level to within 3/16" per 10 ft radius. Use an acceptable vapor barrier such as a 3-in-1 underlayment or a 6 mil polyethylene sheet when installing over concrete, crawl spaces, or other sub-floors that may emit moisture.

Note about gluing down to existing wood floors and other sub-floors listed above: The installer must first verify if the adhesive being used will bond to the existing sub-floor. If the installer is not sure, it is their responsibility to sand or score the existing sub-floor sufficiently prior to glue down to ensure that the bond will hold.

Note about Luan/Luan/Luaun: Our recommendation is always to remove it before installing a new floor. While most urethane adhesives bond to Luan plywood, it is generally considered an unstable substrate for tile or hardwood flooring. It has been known to hold nails/cleats poorly so it may contribute to squeaking or "bouncing" in the case of nail-down installations.

Note about asbestos tiles: our flooring can be glued down over well-bonded vinyl asbestos tile. However, all waxes and sealers which have likely been applied to the VAT must be stripped prior to install. It is prudent for this sort of prep to be done by a licensed asbestos abatement professional.

Subfloor Preparation

- Must be thoroughly swept and free of all debris, wax, oil, paint, curing agents and other contaminants that would interfere with adhesive bond.
- Must be level within 1/8 inch over a 10-foot radius, smooth, firm, and free of debris. To ensure optimal smoothness, it is recommended to use a spike roller on all self-leveling compounds while they are still in the liquid stage.
- Must be dry - subfloor must remain dry year-round. The moisture content of a wood subfloor must not exceed 12%.
- Wood subfloors must be structurally sound, dry and well secured. For nail-down installations, nail or screw every 6" along joists to avoid squeaking. If the subfloor is not level, sand down high spots and fill low spots with an underlayment patch or self-leveler such as Bostik Duralevel 83P Self-Leveling Underlayment.

- Hardwood/bamboo flooring is subject to damage by moisture emitted by concrete slabs. The installer must take proper care to effectively seal the slab via the use of an all-in-one urethane adhesive with vapor barrier, concrete sealant, reverse vinyl or sleeper subfloor with sufficient moisture barrier, or an underlayment with moisture barrier in the case of floating floors. Please note that different all-in-one adhesives have different upper moisture limits – the installer is required to perform a calcium chloride test to determine the moisture emission levels from the slab, and then choose the appropriate adhesive with a compatible upper moisture limit. DO NOT install on concrete unless you are sure it stays dry year-round. All concrete must be tested for moisture, and it is the responsibility of the installer to ensure that the moisture capacity of the adhesive is sufficient for the concrete slab.
- Concrete sub-floors must be fully cured for at least 60 days. The concrete must be flat to 3/16" per 10-foot radius. If it is not level, grind down high spots and fill low spots with leveling compound.
- Concrete subfloors must have all cracks and holes filled with a cement-like patching material and it is the responsibility of the installer to ensure that the adhesive being used will bond with any patching materials. Concrete must be clear and free of the following: voids, loose materials, paint, varnish, adhesive residues, sealers, oil, grease, plaster and gypsum finishing compounds. Asphaltic "cut-back" adhesive residues should be completely removed prior to the installation. It is the installer's responsibility to test concrete and subfloors for excessive wetness and plan their materials and installation accordingly.
- For all types of installation, joints should be staggered 10" to 20". Laying the flooring across the floor joists is recommended.
- In a glue-down installation, the use of a self-leveling product is acceptable as long as it is compatible with the underlying adhesive.
- Please note that 15lb felt paper and red rosin paper are NOT considered moisture barriers.

How to Test a Concrete Subfloor for Moisture

As concrete hardens it traps moisture that is slowly released over time. Ensure to use an approved moisture testing system like the ones outlined in this video: <https://www.youtube.com/watch?v=dTcykFhDVnk>. More examples of tests that can be used to determine sub-floor vapor emissions:

1. Tape a plastic sheet to the concrete and wait 72 hours. Test the moisture level in the air under the sheet with a dew point hygrometer.
2. Weigh a package of dry calcium hydroxide before placing it under a plastic sheet taped to the floor. Wait 72 hours, remove the calcium hydroxide and weigh again. The weight difference will indicate how much moisture was absorbed.
3. Drill a small hole in the concrete and test it with a dew point hygrometer. Wait 72 hours and test again and the difference in reading will indicate the amount of moisture in the floor.

Acclimation

Keep the flooring sealed in its original boxes and protective plastic wrap until you begin the acclimation process (3-7 days before installation). Our bamboo and eucalyptus floors (non rigid-core) must be acclimated for a minimum of 3 full days* prior to installation, following the guidelines below. For excessively dry or humid climates we recommend that you extend the acclimation period to 7 days. **Our rigid core bamboo flooring (SPC core) floors only require an acclimation period of 24 hours.*

1. The flooring must be acclimated in the same room and environment in which it is going to be installed. The climate control system must be turned on at least 48 hours prior to acclimation and the humidity levels must be within the National Wood Flooring recommended range of 40%-60%. If the climate control system absolutely cannot be turned on, a humidifier or dehumidifier must be used to achieve 40%-60% humidity in the space at least 24 hours before acclimation begins, and this same range must be maintained through the acclimation

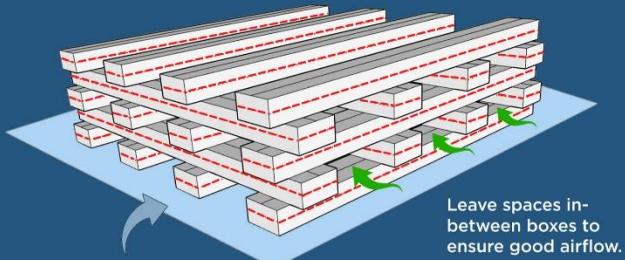
period. Problems may arise if the humidity is not addressed as recommended - excessive moisture in the air can result in swelling of planks which will make installation difficult or result in shrinkage of the planks after installation; too dry of an environment can result in buckling after installation.

2. Do not acclimate over crawl spaces, concrete, carpet or any other surface that may emit moisture. If you do need to set the flooring on such a surface, ensure you follow these steps:
 - a. **Step 1.** Place a moisture barrier down first such as an 8 mil polyethylene plastic tarp and ensure that the edges of the barrier you laid exceed the imprint of the boxes by at least 16 inches.
 - b. **Step 2.** Stack the boxes are a pallet or wood sleepers with at least 4 inches of clearance off of the moisture barrier installed in Step 1.
3. Stack the boxes up to 5 high; maintain spacing between stacks to allow for air flow; cross stacking is preferable when possible, make sure cross stacked boxes are at least 3 feet away from each other to ensure air flow between the boxes. Cut each box all the way down one side as shown in the image below (see the dotted red line), including the interior plastic film, and do the same on both end flaps. Splay/spread out the interior cut plastic to ensure air flow. **Opening only the tops and ends of the boxes for acclimation will not suffice because placing another box on top of an open box will block the air flow. *The sides of the boxes must be cut open as per the image below.*

How to Acclimate Hardwood, Bamboo & Eucalyptus Floors

OPTION #1

Cut boxes on red dotted lines shown below, including interior plastic. Only one long side needs to be cut open, and both end flaps.



If acclimating over concrete or a crawl space, first lay down a 6mm plastic or other waterproof membrane below the boxes. The edge of the membrane should extend out at least 18 inches from the edges of the boxes.

Maintain appropriate humidity and temperature settings during the acclimation process.



OPTION #2

To be used if there isn't enough space in the room for cross-stacking acclimation



Installation Over Radiant Heat Systems

** Our 9/16" thick multi-ply engineered bamboo flooring is warranted over radiant heat, and must be used in combination with an IXPE closed cell 3 in 1 underlayment with a minimum thickness of 2mm. Our stone polymer composite (SPC) core wood flooring can be floated OR glued down over radiant heat. Eucalyptus floors are not warranted over radiant heat. Solid bamboo floors are only warranted over radiant heat when glued down to the substrate using a vapor barrier adhesive sufficient to seal underfloor moisture and with a spread rate thickness of at least 2mm. All pre-installation and post-installation guidelines outlined below must be followed.

PLEASE NOTE: IXPE-backed flooring is not recommended for glue down installation and is not warranted if installed via this method; however, floors backed with cork underlayment are warranted for glue down installation.

We strongly recommend reading the [NWFA Radiant Heat Protocol](#) before beginning your installation plan.

With radiant heat, the heat source is directly beneath the flooring, so the flooring may dry out faster than a similar floor in a home with a conventional heating system. Wood flooring can be installed over radiant heat as long as you understand radiant heat and how it can impact wood flooring – expect some heating season shrinkage.

Please note that these are general guidelines. Please contact your radiant heat system manufacturer prior to installation to ensure that your specific system is compatible with bamboo flooring as well as if they have any specific requirements.

PRIOR TO INSTALLATION – RADIANT HEAT SUBFLOORS

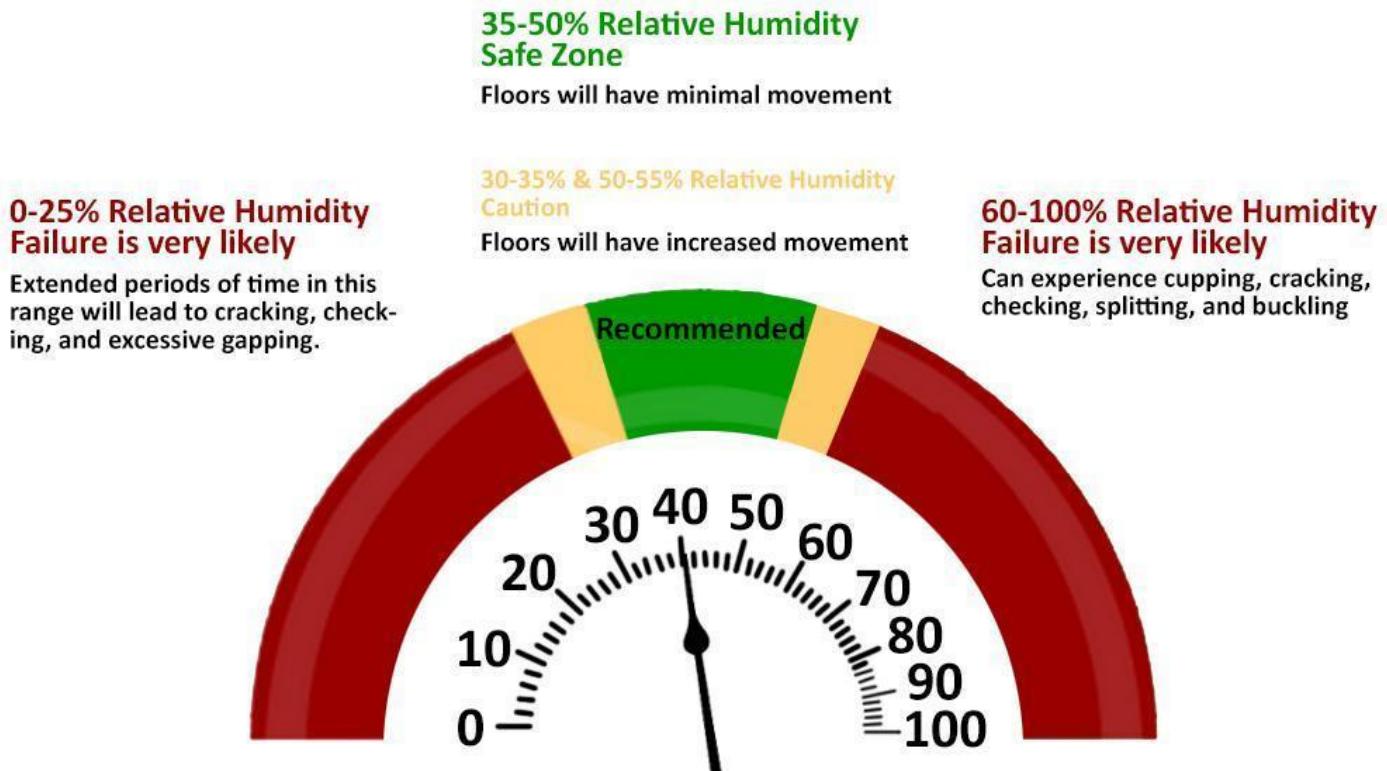
If the radiant heat system is embedded in concrete, turn the radiant heat system on with the temperature set on high for 5-6 days. This should help burn off any moisture residing in the concrete prior to installation and this should be done the week leading up to installation. Next, the temperature should be set to 65° F and held at that temperature 24 hours prior to acclimating the floors – during acclimation – during installation – and for 72 hours after installation.

DURING INSTALLATION

- Make sure to leave 1/4" - 1/2" of expansion space between the flooring and the walls.
- The temperature of the radiant heat system should always be maintained at a constant 65° F.
- A stove or any other item that can affect the temperature of the ground should not be used at the job site.
- The flooring must be acclimated over the radiant heat with the system turned on and set to 65° F. The same acclimation preparation must be followed as always, including cutting the boxes open and stacking them as prescribed in the Acclimation section of this document.
- If the radiant heat system is encased in concrete or another substrate that releases moisture, a 6 mil polyethylene barrier must be placed between the flooring boxes and the substrate so that the flooring does not absorb moisture during acclimation.

AFTER INSTALLATION / MAINTENANCE

- During the first three days after installation, the radiant heat system temperature should be maintained at a temperature of 65° F. After that, the temperature can be set warmer, by 1.5° F each day.
- The temperature of the sub-floor must never exceed 85° F.
- When turning off the radiant heat system, it must cool by a temperature of 1.5° Fahrenheit per day. Never turn your radiant system off suddenly.
- The radiant heat system cannot fluctuate in temperature rapidly. Room temperature should vary no more than +/- 7 degrees Fahrenheit year around.
- Slight changing of color is expected for wood flooring installed over radiant heating systems.
- Radiant heat systems, even when set at a reasonable temperature, can draw moisture out of wood floors. A humidification system might be necessary to ensure the flooring stays in its stable zone.



Required Tools & Supplies - GENERAL

NOTE: Please read all instructions on individual installation product packaging (e.g. glues, tapes, other adhesives, underlayment, etc.) thoroughly before using.

- Rubber mallet
- Tapping block (this can be a square piece of wood or hard rubber)
- 60 tooth minimum CARBIDE saw blade. Higher tooth counts will give you a smoother cut.
- Table saw
- Mitre saw
- Oscillating saw/tool to cut door frames as needed.
- Chalk line
- Tape measure
- Carpenter's square
- For finishing rows or working around islands, or installing perimeter moldings such as baseboard or quarter round, you'll need to use a 23 gauge micro pin nailer (can be rented at most big box stores). They can also be glued using Titebond Premium Wood Glue or similar.
- The only tape approved for use on our finish (moldings and flooring) is 3M/Scotchguard #2080 tape. Do not use any other tape. Other tapes (including blue painter's tape) may cause finish to peel. Regardless of which tape you use, do not leave the tape on any finish surface for more than 12 hours or it will damage the finish.

Required Tools & Supplies - NAIL DOWN INSTALLATIONS

- **High powered pneumatic nailer** – strand woven flooring is very hard, like Brazilian Teak and other exotics, and thus requires the use of a high-quality, powerful 18-gauge cleat nailer such as a Primatech Q550 ALR. Some

installers have also reported success with the Powernail 50P Flex. Only 18 gauge cleats are to be used on these floors.

- **18 Gauge Cleats** – 18 gauge, 1 ¼" or 1 ½" or 2" lengths depending on thickness of subfloor.
- **15 lb asphalt saturated felt paper** or red rosin paper

Required Tools & Supplies - GLUE DOWN INSTALLATIONS

- Regardless of subfloor type, you must use a 100% urethane adhesive valid for hardwood or bamboo floors.
- If gluing down over concrete the adhesive must contain a vapor barrier with a moisture cap limit that will be sufficient for your subfloor (you can determine the amount needed by performing a calcium chloride test using a kit found at the big box stores).
- Ensure you have the correct trowel that pairs with your adhesive. Use of a NON-compatible trowel may cause flooring failure due to improper adhesive spread rate.
- When gluing down a floor it is crucial that you use Bostik Adhesive Remover Towels and wipe up the wet glue as you go. If the glue dries (cures) on top of your flooring finish it will be impossible to remove without resulting marks in the finish. DO NOT use paint thinner, mineral spirits, turpentine or other abrasive chemicals to clean the glue off – they will damage the finish.

BEGINNING AND DURING THE INSTALLATION

Inspect each board before installation and use common sense and reasonable selectivity to set aside any with visible defects. Using paint thinner, mineral spirits, turpentine or other abrasive chemicals will damage the finish. Make sure you have an approved floor cleaner or adhesive remover wipes that are compatible with our floors. Do not use adhesive remover wipes on hardwax oil floors as they are meant only for polyurethane floors.

Work out of multiple boxes

(4-6 boxes recommended)

Bamboo/eucalyptus is a natural product and has natural color variations. Using planks from 4-6 boxes simultaneously creates a natural, random shade effect. Never lay out a floor without paying attention to the overall look. You control the color and pattern of planks that are installed and therefore you control the true color and variation of wood in your floor.

Getting Started

It is up to the installer to determine where to lay the first row as it is dependent on the room layouts and how the flooring interconnects between the rooms. In the case that rooms are not square and corrections need to be made, the run can be broken at doors and a t-molding can be installed, then the run can be corrected. Some installations will begin in the middle of the room or middle of a hallway to ensure a straight line shot in a visible area. Other times the planks can be started square with the longest wall (parallel to the longest wall in the installation).

Remember to always leave 1/4" - 1/2" expansion space from base plate or wall. Ensure starter rows are firmly in place to hold succeeding rows. Establish a working line by measuring an equal distance from the wall at both ends and snapping a chalk line. This is usually the straightest and best reference for establishing a straight working line. The distance you measure from the wall should be the width of a plank plus about 1/4" - 1/2" for expansion space. If the outside wall is out of square, adjust your working line to make it straight for the rest of your installation.

The ideal plank layout pattern/design is a random pattern created by cutting the planks at varying lengths at the start of each row. Ensure that the butt ends of the planks in adjoining rows are at least 8" apart from each other (this means no cut plank should be less than 8" in length). Stair step patterns are also acceptable.

NAIL DOWN INSTALLATION

It is recommended that you lay 15 lb asphalt saturated felt paper or red rosin paper evenly over the entire subfloor prior to beginning, however please note these products are not considered moisture barriers. We do not recommend nailing down over a 3 in 1 underlayment or other compressible material such as foam or rubber; repeated compression of such a material from normal foot traffic may cause the nails/cleats to loosen over time. Furthermore, nailing through a 3 in 1 underlayment will nullify its vapor protection properties.

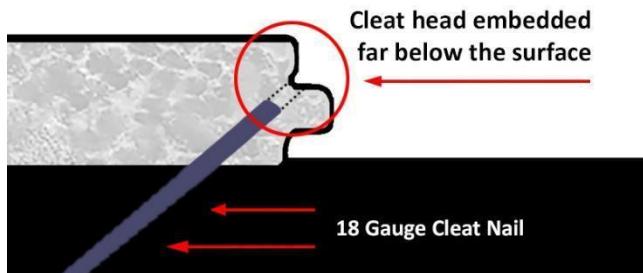
BEFORE YOU BEGIN

- Ensure you're using an 18 gauge pneumatic nailer. (preferably a Primatech Q550 ALR)
- Ensure that you are only using 18 gauge cleats (1 ¼" - 1 ½" recommended)
- Ensure the PSI setting on the nailer is high enough (90-120 recommended depending on the nailer).
- Ensure the air compressor, nozzle connectors and hose are all in good condition and there is no air leaking. Check for air leaks, wear marks, holes, etc.
- Ensure that the nailer is well-oiled and clean.
- As you begin, ensure the nailer is seated properly. (make sure the installer is not leaning the nailer forward, and is using the correct adapter plate)

As with all hardwoods there may be density differences between planks depending on the age of the plant and the density of the culm area of the plant being used.

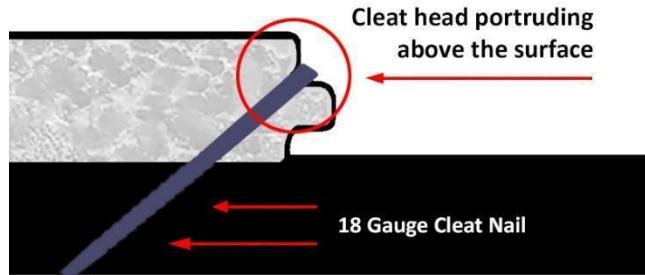
NAIL GUN PRESSURE TOO HIGH: **ALWAYS** practice on a few planks to ensure the correct PSI setting on the nail gun. If the pressure is too high the nail will split the plank. When using the mallet always use small, light taps - as opposed to large, forceful taps – this is the best to get a snug fit.

Air pressure too high



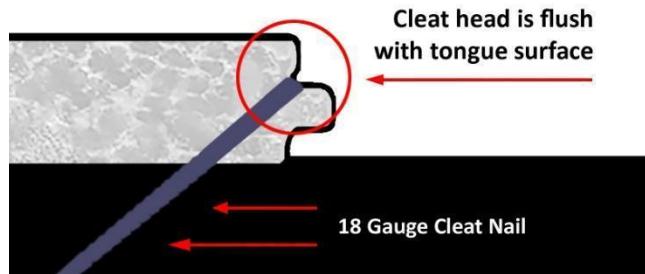
NAIL GUN PRESSURE TOO LOW: If the PSI is too low you will end up with dimpling ("goosebumps") on the face of the floor. **Always inspect for dimpling** from a low angle and with backlighting after installing the first two rows, because it's difficult to see when standing directly over the area. **It is the responsibility of the installer** to check each row after it has been nailed down to ensure all cleats are sufficiently embedded in the planks so they don't cause dimpling in the finished floor upon fastening successive rows.

Air pressure too low



NAIL GUN PRESSURE JUST RIGHT: You will know that the pressure is just right when the cleat is flush or slightly below the surface of the tongue.

Correct air pressure



If a starter or finishing row cannot be nailed through the tongue at a 45 degree angle, they can be glued into place a urethane adhesive or by wedging, pre-drilling and screwing, or face nailing using a 23 gauge micro pin nailer. It is the installer's discretion of what size drill and screws to use for pre-drilling. Installer will need to use matching wood putty to fill in screw holes, such kits can be found at the big box or local flooring stores (Picobello Floor Repair Kit or Timberrmate are good fillers to use). Always test your methods on a sacrificial plank before continuing.

Once initial rows are secure, second and further courses should be blind-nailed directly above tongue at a 45 degrees to 50° angle to the face. Fasteners should be spaced at 8" to 10" intervals with a minimum of six fasteners per piece. Do not place fasteners within 3 inches of each board end.

Tongues are prone to splitting – and that is okay!

When nailing down extremely dense hardwoods like strand bamboo and eucalyptus there is a chance that the tongue on the planks will crack or split when the cleat is driven in. As long as less than 30% of the cleats have splitting around them, and the splitting is minor, this is perfectly normal and is not considered a defect (your floor will still be covered under the warranty) as the cleat is still firmly driven into the rest of the board keeping it securely in place. When splitting is happening try to use less force when striking the nailer with the mallet. Below is an image showing acceptable splitting, if occurring on less than 30% of the planks.

Cleat properly driven and no splitting



Cleat properly driven and some splitting



Picture below shows dimpling caused by using improper cleat size



Picture below shows damage from excessive force and improper nailer seating



GLUE DOWN INSTALLATION

A quick tip about flooring adhesives. Flooring adhesives typically have a “cure time”, and the clock begins to tick as soon as you open the lid on the pail. Closing the lid back onto the pail usually does not stop this curing process. Thus, once you open a pail of glue you should plan to use the entire pail as it will harden within the stated cure time. To see the cure time and other helpful information you can refer to the label that is on the pail itself.

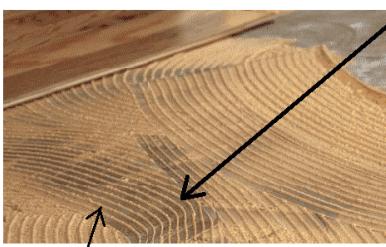
Important: When gluing down to concrete, or unconditioned space that is not sealed, you must use a [urethane glue for wood floors that contains a vapor barrier](#), and **you must use the correct recommended trowel** to ensure the proper spread rate (for our Ironwood All In One with Vapor and Sound Barrier it's [a \$\frac{1}{4}\$ " x \$\frac{1}{4}\$ " V Notch Trowel](#), but it may be different for other vapor glues – make sure to check the label). Before gluing the floor down to concrete/cement the subfloor must be fully dry and level as described in the Subfloor Preparation of this document.

Test the concrete slab or subfloor for moisture and then select the appropriate adhesive. When installing over concrete or unconditioned spaces you should always test for moisture emissions [using a measurable moisture or calcium chloride test \(ASTM F1869\)](#) to ensure that the vapor lock adhesive you have chosen has a moisture limit that is suitable for the subfloor you are installing over. Some slab emissions may exceed the upper moisture limit of the adhesive, which will result in cupping later. You will want to choose your adhesive based on the vapor emission level of the subfloor.

When spreading adhesive on the concrete you must ensure all ridges are **compressed into a monolithic layer**, as well as ensuring there is 100% coverage of the adhesive over the subfloor and transfer to the back of the flooring. This can be achieved by applying proper pressure to the trowel at a 45 degree angle. You should not be able to see the concrete floor in the grooves left behind by the trowel.



Full glue coverage on slab has not been achieved



Full glue coverage on slab has not been achieved

THE WRONG WAY TO APPLY GLUE TO A CONCRETE SLAB. (MAY RESULT IN CUPPED FLOORS)

If you can still see the concrete floor in the grooves of the glue, you have troweled the glue down incorrectly. This will result in a cupped floor. When gluing down over concrete slabs you need to have 100% coverage of glue on the slab; when applied correctly using a V Notch Trowel you should not be able to see the concrete.

Important! When gluing a bamboo floor down to concrete you must always use an adhesive that contains a moisture barrier. Most vapor barrier adhesives contain a 15 lb moisture limit, however it is the responsibility of the installer to ensure that their slab does not exceed the allowable limit.



THE RIGHT WAY TO APPLY GLUE TO A CONCRETE SLAB. (EVEN SPREAD RATE, 100% COVERAGE)

100% even spread rate and full coverage on the concrete. You cannot see the concrete floor in the grooves. You have achieved consistent mm thickness of glue spread, evenly over the slab.



Important! When gluing a bamboo floor down to concrete you must always use an adhesive that contains a moisture barrier. Most vapor barrier adhesives contain a 15 lb moisture limit, however it is the responsibility of the installer to ensure that their slab does not exceed the allowable limit.

Picture below shows only 20% coverage of glue on slab, resulting in cupping



Important: Make 100% sure to clean up the spilled adhesive as you're installing the floor – before it dries. Once the glue dries on top of the finish it could be impossible to remove without damaging the finish, which will result in having to cut out and replace the affected planks. You can use Bostik Adhesive Remover or [Bostik Adhesive Remover Towels](#) for this. If it is a hardwax oil finish, do not use remover adhesive towels, instead use a damp rag or paper towel soaked in Bio-C cleaner or soap and water.

IMPORTANT REMINDERS:

- If the adhesive is allowed to dry on top of the flooring planks it will irreparably harm the finish. Clean it up as you go! We recommend Bostik Adhesive Remover Towels for removing glue from our polyurethane finish floors (NOT recommended for hardwax oil floors).
- Do not use mineral spirits to remove adhesive from the bamboo/eucalyptus flooring since it may dull the finish. Other cleaning agents used to take up glue should always be tested first on a sacrificial plank to ensure that they do not damage the finish. The installer is responsible for flooring damaged by adhesive that has cured or by the use of unapproved cleaning agents.
- Use only 3M/Scotchguard #2080 tape to secure planks together. Do not leave any tape on any finish surface for more than 10 hours or it will damage the finish.

A note about pressboard: This is a fine particle board and is a fairly common subfloor material, especially in older homes. It's no good at holding nails or staples but flooring has been successfully glued over it. Of course it's always a good idea to re-screw it down to the joists and also to be sure crawl spaces have required vapor barriers. Most 100% urethane adhesives will work over pressboard.

Always leave a 1/4" to 1/2" expansion space between flooring and all walls and vertical objects (such as pipes and cabinets). Use wood or plastic spacers during installation to maintain this expansion space.

Starting at an outside wall, spread as much adhesive as can be covered by flooring in 30-60 minutes (or as recommended on the adhesive instructions label on the pail). Spread adhesive with a trowel at a 45°angle. When the ends of the plank come closely together, do not apply excessive force when tapping, since this could affect the finish. Small, light taps - as opposed to large, forceful taps - are best to get a snug fit.

- When the first section is finished, continue to spread adhesive and lay flooring section by section until installation is complete.
- Remove any adhesive that gets on the flooring surface immediately using Bostik Adhesive Remover Towels (only for polyurethane finish floors, NOT hardwax oil finishes).
- Apply 3M tape perpendicularly to the seam of adjoining rows to prevent the rows from spreading apart while drying.
- Walk each section of flooring foot-by-foot, or roll with a 100-pound roller, within the adhesive working time to ensure solid contact with the adhesive.
- Flooring on the perimeter of the room may require weighting until adhesive cures enough to hold the boards in place. Do not place heavy furniture or appliances on the freshly laid floor for 24 hours.

FLOATING INSTALLATION

IMPORTANT: Unless the interior of your home or geographic location has stable year-round humidity, please ensure to follow these recommended run limits: do not exceed 25 feet across the widths of the planks (tangentially) and 45 feet down the lengths of the planks (longitudinally). Refer to the diagram below. **NOTE:** The rigid core bamboo flooring (SPC core) floors have run limits of 40 ft x 50 ft.

Engineered Floating Floor Guidelines

1) If the indoor humidity has the potential to fluctuate more than 25% throughout the year (opening windows for a few hours doesn't count) or the indoor humidity has the potential to fall below 35%, and there is no dehumidifier or humidifier (or humidity modulator built into the HVAC), the **yellow run limits** on this diagram should be adhered to.

2) Expansion gaps of at least 1/4"-1/2" must be left wherever the flooring comes into contact with walls, cabinets, door frames or other structural elements. We recommend leaving a 1/4" gap on the longitudinal sides (butt ends) of the planks and a 1/2" gap on the tangential sides (long sides) of the planks.



We do not recommend, and our warranty does not cover, installing **tongue and groove solid** floors in a floating method.

Only 3M/Scotchguard #2080 tape to secure planks together. Do not leave any tape on any finish surface for more than 12 hours or it will damage the finish. You'll want to make sure to follow the "Solid Floating Floor Guidelines" diagram above in this case.

Ensure to leave at least $\frac{1}{4}$ " to $\frac{1}{2}$ " expansion gap around the perimeter of the floor and at all door frames. We recommend using a t-molding at doorways, especially when long runs are involved, however if the expansion gaps are carefully maintained around the doorway then a t-molding is not required. Doorways are a frequent location of pinning and plank separation when expansion gaps are not maintained. Floating floors are not meant to be secured/glued/nailed to the subfloor or to perimeter moldings such as quarter round, shoe molding and baseboard.

Floating floors should not be installed under kitchen cabinets. In a floating installation you want to avoid "pinning" a long row of successive flooring planks across the widths of the planks, and more so if that run of planks takes up a large section of the overall run. This is more applicable across the widths of the planks (tangentially) than down the lengths of the planks (longitudinally). The floor needs to expand and contract during seasonal cycles, and pinning the planks down will inhibit this movement and may cause gaps to form between the planks. If you have a piece of furniture with a flat bottom that stretches across the widths of the planks for more than 50% of that given run, and it's over 200 lbs, we recommend gluing or nailing the floor down instead. In the case of heavy appliances such as refrigerators, we recommend that you create an island of separate flooring underneath the appliance, creating a break in the flooring between that island and the rest of the floor. This break can be covered by a t-molding.

We recommend using a high-quality 3-in-1 underlayment under all floating floors. Carefully follow the underlayment installation instructions to know which side to face down when installing over concrete. When installed over concrete, the underlayment used must contain a vapor barrier with overlapping seams or waterproof tape used to tape the rolls together. For underlays that contain an overlapping film/plastic flap, ensure the flat side of the roll is against the outside wall and the side with the excess/overlapping plastic film is towards the center of the room.

Starting in a corner unroll the underlayment until it hits the far wall. Cut the underlayment leaving about $\frac{1}{4}$ " between the underlayment and the wall. Roll out a parallel line of underlayment adjacent to the first roll. Cut at the wall and tape the entire length of the seam with duct tape.

Note: When rolling out the adjoining length of underlayment be sure to overlap the plastic and tape foam to foam. This will prevent moisture from penetrating in between rolls. Do this for the entire room being sure to tape all seams. For ease of installation you can also tape down the perimeter of the underlayment to the subfloor.

- Start in the corner of the room with the locking edge open toward you and the L-shaped side toward the wall. Install the entire first row, clicking the end of each board and cut the last board to size.
- Be sure to leave $\frac{1}{4}$ "- $\frac{1}{2}$ "-wide space between the floor and wall. You can use expansion shims at 12" intervals.
- For a better expansion joint, it is recommended that the tongue be sawn off of each plank along the wall.
- Start the second row with a cut piece at least 18" in length. You can also use the cut board from the first row.
- When installing the second row, insert the long edge of the board at a 20° to 30° angle, adjacent with the first row.
- Push forward and down at the same time, and make sure the boards lock together. You will often hear a clicking noise.
- At the end of each row, use a rubber mallet as necessary to ensure that all edges are tightly fitted together.

- Do not hit the boards with too much force as you may cause damage to the locking mechanism.

After installing the third row make any adjustments necessary to straighten the floor as additional installed rows will make it harder to shift. Repeat the installation instructions above throughout the entire room until you've reached the last row. You may choose to do a random staggered pattern or a stair step or bonded pattern. The last row will probably need to be cut lengthwise. To measure the last row, place a board directly on top of the last installed row of the boards. Scribe the row and cut to fit.

Once your flooring has been installed, you can begin to use it immediately.

MOLDINGS INSTALLATION NOTES

Always ensure to use an adhesive that is not water or latex based when gluing moldings and stair pieces down. Using an adhesive that releases moisture will damage the moldings and cause splitting, cracking and possibly warping. We recommend that you use the same adhesive to glue the moldings as was used to glue down your flooring. Once a transition molding is glued down, place a heavy object on top of the molding for a period of at least 8 hours to ensure a cohesive bond.

The only tape approved for use on moldings is 3M/Scotchguard #2080 tape. Do not use any other tape. Other tapes (including blue painter's tape) may cause finish to peel. Regardless of which tape you use, do not leave the tape on any finish surface for more than 12 hours or it will damage the finish.

Installing strand trim pieces with a nail gun can be more difficult than trim pieces made of other materials and you will need to either a) pre-drill these moldings and then nail them, b) glue them in using Titebond Premium Wood Glue or similar, or c) use a micro-pin nailer (we suggest the Bostitch Porter Cable 23 GA gun with a 1" long micro thin nail - this can be purchased directly from Bostitch or rented from a big box store).

AFTER INSTALLATION

- Remove expansion spacers and install base and/or quarter round moldings to cover the expansion space.
- For glue down installations do not allow foot traffic or heavy furniture on floor for 12 hours or as adhesive manufacturer requires.
- Vacuum your floor to remove any dirt or debris.
- We will not accept responsibility for flooring damaged on installation. All installation procedures should follow National Wood Flooring Association (NWFA) recommendations. For further information, contact NWFA at 800.422.4556

MAINTENANCE & CLEANING – ACCUSEAL® POLYURETHANE FINISH

The maintenance program for bamboo & eucalyptus flooring is designed to be user friendly. The latest advances in finish technology are used in our manufacturing process to help aid product performance and maintenance. The use of products like wax, water or oil soaps should be avoided.

Before You Begin, Some Important Notes:

- Avoid Harsh Cleaning Agents: Never use mineral spirits, paint thinner, turpentine or other harsh chemicals to clean your bamboo & eucalyptus flooring as they may damage your finish.
- Don't Wet Mop Your Bamboo Floor: Be sure not to use a wet mop or leave any excess water on your floor.

- Don't Steam Mop Your Bamboo Floor: Please note that using a steam mop on your floors will void your warranty and may cause irreparable damage. For further reading please visit this page: <http://flooring.about.com/od/floor-cleaning/a/How-To-Steam-Clean-Hardwood-Flooring.htm>
- Always Test Cleaners On A Sacrificial Plank: To be sure you will not damage your floor, always test any chemicals or cleaners on an extra/leftover flooring plank to see what the final effect will be.
- Use A Chair Mat Under Rolling Office Chairs: Always use a chair mat under a rolling office chair or your finish will wear away (this is true of all wood floors). Only use chair mats that are approved for use over wood flooring as some chair mats trap moisture or cause other problems that may compromise the finish.
- Please note that using Orange Glo® or other oil-based products on your bamboo & eucalyptus flooring as they may ruin the finish.

Protect your floors

After your floor has been installed, floor protectors should be placed under the legs of chairs and tables. Doors leading outside should have floor mats placed both inside and out. Your floor should be cleaned weekly with the use of a suction vacuum, not abrasive rotary brush vacuums, to remove grit and debris from the surface of the flooring. Higher traffic areas may require more frequent cleaning to keep the floor free of grit and abrasive debris that can damage the floor and finish.

Keep a few planks

After installing your bamboo & eucalyptus floors, keep at least a few extra planks to use as possible replacement boards or to test with new cleaning solutions. (If damage occurs or the finish is dulled from using a cleaner, it is better to find out on an extra plank than on your new floor.)

Avoid wet spills

Bamboo & eucalyptus flooring has properties similar to wood flooring, so never leave any standing water on your floor. In case of a spill be sure to clean up the mess as quickly as possible.

UV / Sunlight Exposure

Do not cover the floors with construction paper or plastic for extended periods of time. Construction paper and other protective floor coverings have the potential to cause discoloration in all hardwood flooring because they result in uneven light absorption. Plastic membranes may cause a build-up of humidity and can result in cupping or other moisture imbalance problems.

There are few flooring types on earth that will not fade and change color over time from constant exposure to direct sunlight (and even overhead artificial lighting) for extended periods of time. We recommend installing UV protection film on all windows to help protect against fading, and frequently rotating rugs and furniture to avoid sun spots.

Clean Regularly

For routine cleaning of your bamboo floor, any approved hardwood floor cleaning system such as Swiffer Wet Jet (with hardwood insert) or Bona Hardwood Cleaning System will work. For small stains and grit marks, you can use a damp cloth to rub them off followed by a dry cloth. For removing tough stains such as paint, adhesive residue, and gum, you can use more heavy-duty products. We strongly suggest testing your desired cleaning product on a leftover flooring plank prior to cleaning your actual floor, to ensure that product does not damage the factory finish.

Otherwise you can also use a soap-based concentrate solution that is approved for pre-finished wood floors. First, use a good broom or microfiber dry mop to remove excess dirt and debris from your floor. Second, pour 1/5th of an

approved hardwood floor cleaner concentrate in. Third, dip your mop into the bucket but then ensure to completely wring out all water from it leaving it only lightly damp – then use this lightly damp mop to clean the floor.

Surface/Finish Scratches

Minor scratches can occur on the surface of the floor's finish, which is designed to protect your bamboo & eucalyptus flooring from damage. If scratches occur, first try to buff them out using a soft rag along with an acceptable hardwood floor cleaner.

We have found that after a few cleanings and normal foot traffic, light scratches tend to wear away. If a scratch remains, or you have a deep scratch that looks white in color, a tested remedy is to use mineral oil or almond oil on a soft rag to rub it out.

Deeper Grooves & Gashes

Large grooves or gashes can be avoided via the use of furniture pads under the legs of all heavy furniture including tables, chairs or couches. Take all the precautions you can when moving any type of furniture on your floor to avoid damage. If a large gouge occurs, you can try Timbermate or Picobello floor repair kits. If that is unsuccessful, you have three options, which may require the help of a flooring professional:

- Repair: Flooring professionals can repair certain gashes and gouges. They will use floor putty to fill the existing gouge and finish that small section with a new coating, but they may also be able to use urethane. Please check with your floor installer to see if this option is available to you.
- Replace: Replacing a bamboo & eucalyptus flooring board can be very tedious and, depending on the location of the damaged board, nearly impossible, however experienced carpenters or installers using the right tools can manage this.
- Refinish: Your bamboo & eucalyptus floors can be refinished. Refinishing a floor is a process of sanding down the floor to remove all scratches, gashes and dents. Once the floor is smooth and flawless, a new protective coating is applied unveiling an almost brand new floor. You will want to use a polyurethane finish; some installers have had good results with the Lenmar brand.

Cured Adhesive left on top of flooring with polyurethane finish

Once adhesive cures on a wood flooring surface it is very tough to remove and may leave behind a dulled effect/area on your finish. You can try the following method to remove the cured glue:

1. Pour a small amount of Bostik Urethane Adhesive Remover on the glue spot, or squeeze a small amount of remover from a Bostik Adhesive Remover Towel. (only for polyurethane finish floors, NOT to be used on hardwax oil finishes)
2. Let it sit for about 15 minutes.
3. Wipe the area clean.
4. Apply adhesive remover again to the same spot.
5. Let it sit for about a minute.
6. Use a Mr. Clean® Magic Eraser® to remove cured glue.
7. Clean the area well.

Oily Residue Adhesive Remover

If adhesive remover leaves an oily residue on your floor:

1. Wipe the area with a warm damp rag, which helps to loosen the oil.
2. Wipe the area with a dry rag to soak up and take away the oil.
3. Thoroughly clean the floor with an acceptable floor cleaner following the instructions above.

4. Repeat if necessary.

If you have a large room, work in sections to ensure that the damp rag is followed by the dry rag while the oils are still loose.

5. I accidentally damaged or wore through my finish, what do I do now?

We recommend that you enlist the help of professionals to assist you with finish repairs as they can be tricky. If you are confident that you can make the repair on your own, we advise that you practice your method first on a sacrificial flooring plank or area in the installation. You may use a buffer with varying 80/12/150 screens to achieve the desired smoothness and follow up with a matte-finish oil-based polyurethane for coating.

I'd like to add a protective coating or layer to my floor, how do I do that?

We've had some installers report positive results with using the following methods:

- Option 1: first use two sealer layers of the Basic Commercial Catalyst Sealer on bottom and then apply two layers of Basic StreetShoe on top.
- Option 2: Use IFT, water rinse, use Squeeky cleaner, apply TYKECOAT, then finish with Basic Street Shoe Cleaning and Maintenance Instructions For Hardwax Oil Finish Floors

MAINTENANCE & CLEANING – HARDWAX OIL FINISH

Before You Begin, Some Important Notes:

- Avoid Harsh Cleaning Agents: Never use mineral spirits, paint thinner, turpentine or other harsh chemicals to clean your bamboo & eucalyptus flooring as they may damage your finish.
- Don't Wet Mop Your Bamboo Floor: Be sure not to use a wet mop or leave any excess water on your floor.
- Don't Steam Mop Your Bamboo Floor: Please note that using a steam mop on your floors will void your warranty and may cause irreparable damage. For further reading please visit this page: <http://flooring.about.com/od/floor-cleaning/a/How-To-Steam-Clean-Hardwood-Flooring.htm>
- Always Test Cleaners On A Sacrificial Plank: To be sure you will not damage your floor, always test any chemicals or cleaners on an extra/leftover flooring plank to see what the final effect will be.
- Use A Chair Mat Under Rolling Office Chairs: Always use a chair mat under a rolling office chair or your finish will wear away (this is true of all wood floors).
- Please note that using Orange Glo® or other oil-based products on your bamboo & eucalyptus flooring as they may ruin the finish.

Cleaning and Maintenance Instructions For Hardwax Oil Finish Floors

REGULAR MAINTENANCE AND CLEANING

- When possible, clean only by sweeping or wiping with a dry cloth. Over-frequent washing will only needlessly expose your floor to moisture.
- When washing is necessary, use only Timberex® Bio-C Cleaner. Do not use strong cleaners, cleaners containing bleach or ammonia, solvents or furniture polish.

- Timberex Bio-C is sold in 1-liter containers of Concentrate with an empty measuring cup attached. Do not use the cleaner at Concentrate strength!
 - 1) Pour about $\frac{1}{4}$ cup of Bio-C soap into an empty 32oz spray bottle (not included).
 - 2) Fill the remainder of the spray bottle with water and shake gently.
 - 3) Lightly spray the area to be cleaned with this diluted soap mixture, wait a few minutes, and then wipe clean.
 - 4) Rinse the surface by wiping with a clean moist cloth. Do not flood the surface with water. Ensure the surface is dry before resuming contact.

SPOT REPAIRS – SCRATCHES AND GROOVES

Due to the natural oil finish of our sawn floors they are a bit more vulnerable to scratching. However unlike standard urethane finishes, repairing a hardwax oil floor is simple with Mohawk® touch-up markers and Fil-Stiks®. Furthermore, hardwax oil flooring comes with the advantage of never needing to be completely refinished. With proper cleaning and care your hardwax oil flooring

For our **white stain** **sawn** floors, we recommend Mohawk® Fil-Stiks® Driftwood (M230-0503) (<http://bit.ly/2VFKeiP>) and Mohawk® Ultra™ Bond Waterborne Clear Finish Marker (M292-0040) (<http://bit.ly/2H1fdwn>)

For our **brown stain** **sawn** floors, we recommend Mohawk® Pro-Mark II Touch-Up Marker -Van Dyke Brown (M267-1478) (<http://bit.ly/2J2MWJ1>) finish pen and Mohawk® Ultra™ Bond Waterborne Clear Finish Marker (M292-0040) (<http://bit.ly/2H1fdwn>)

First clean the floor as described in the regular maintenance instructions above. Then apply the Mohawk® Fil-Stik® on the scratch and wipe once with a clean cloth. The final step is to seal the affected area using the clear finish marker and then wipe it down again with a clean cloth.

ANNUAL MAINTENANCE REQUIREMENTS

- At one-year intervals, or whenever the floor begins to appear dry and water droplets soak into the surface, perform a maintenance Oiling as directed below.
Tip: You shouldn't need to move your furniture. Oil is only needed where traffic occurs.
- Clean and thoroughly dry the floor per the instructions above.
- You will need a supply of lint-free cloths or disposable towels. For larger areas, you may also desire a lint-free applicator pad and a disposable tray such as a paint-roller pan liner.
- Plan your strategy. The oil must be wiped away within 20-30 minutes of application. Unless you have a helper to do the wiping, only apply as much oil as you can wipe away within 20 minutes' time. Divide larger rooms into sections. Always "break" at an edge, never mid-board.
- Stir Oil thoroughly (do not shake). The heavy waxes which make your floor resistant to water will have settled in storage. If these are not fully blended, the finish will not perform properly.
- Pour only a small amount of oil at a time into the plastic tray. Do not pour in the whole can, as this will cause the applicator to be oversaturated. Do not pour the Oil directly onto the floor.
- Dip your cloth or applicator lightly into the oil, so that the applicator is not oversaturated.
Working from a far corner towards a point of exit, apply a THIN coat of oil, spread evenly so that no puddles or dry spots remain. As noted above, work in manageable sections.

- Wait 15-20 minutes. Wipe away ALL oil residue, until only trace amounts appear on a clean cloth. Follow your application path so that the oldest areas are wiped away first.
- Allow the surface to dry overnight (8-12 hours) before resuming light contact. Wipe up spills immediately and avoid washing with water for one week.
- Sometimes the wax in the oil may develop occasional shiny or dull spots. Wait one week for the wax to cure, and then gently hand-buff with a fine white polishing pad to blend.

IMPORTANT! Oil-soaked rags are a combustible fire hazard. Place oily rags into a zip-seal plastic bag or other vessel immediately after use and fill with water. Dispose of rags in accord with local regulations.