# Installation Instructions

**Pre-Finished Engineered Bamboo**

Synergy Wide Plank | Studio

**Välinge locking System**

Teragren®

FINE BAMBOO FLOORING, PANELS & VENEER

## Industry Designation of Engineered Bamboo

**The customary construction of engineered bamboo traditionally describes:**

1. Flat Grain - Three layers of bamboo.
- Top layer flat grain.
- Center layer laminated cross grain.
- Bottom layer flat grain, for third ply.
- Or surface veneer of bamboo on multiple layer wood plywood core.

2. Vertical Grain - Three layers of bamboo
- Top layer vertical grain.
- Center layer laminated cross grain for three-ply.
- Bottom layer flat grain, for third ply.
- Or surface veneer of bamboo on multiple layer wood plywood core.

3. Strand Woven Bamboo - Three layers of bamboo.
- Top layer strand woven.
- Center layer laminated cross grain for three-ply.
- Bottom layer flat grain, for third ply.
- Or surface veneer of bamboo on multiple layer wood plywood core.

## Attention

Before starting installation, read all instructions thoroughly. Should any questions arise, please contact the local Teragren dealer or phone Teragren Bamboo direct at 800-929-6333. Instructions available at info@teragren.com. All installation instructions must be followed for warranties to be considered valid. Pre-inspect the job site prior to delivery of the floor to ensure the structure is suitable for hardwood flooring installation using the following guidelines.

## Owner/Installer Responsibility

1. Inspect all materials carefully prior to installation. Warranties do not cover materials with visible defects once they are installed. Installation constitutes acceptance.

2. Inspect the bamboo flooring in *well lighted conditions* to ensure proper identification of any potential problems. Carefully inspect the flooring for grade, (see Teragren Bamboo grading standards at www.teragren.com ) for color, finish, and quality. If the flooring is not acceptable, contact your Teragren retailer and arrange shipment of replacement material. Defective product will be replaced. Material that is subjectively viewed as unacceptable but falls within Teragren' s grading norms will not be replaced.

3. Prior to installation of any flooring, the installer must ensure the job site and subfloor conditions meet the requirements specified in these instructions.

4. Bamboo flooring installation should be one of the last items completed on the construction project. Limit foot traffic on the finished bamboo floor.

## Grading Standards

**General Rules:**

Bamboo flooring shall be tongue and grooved and end matched, unless otherwise indicated, as Välinge Self Locking. Flooring shall not be considered of standard grade unless properly dried. The drying standard for Teragren Bamboo solid bamboo product shall be 7 to 9% moisture content by volume with a plus or minus factor of 2% for storage conditions in various climate zones.

Grading Rules:
Teragren Bamboo floors are not graded in the same way as hardwood flooring. Bamboo has many similarities to wood but different grading standards are applied.

The main stem of a bamboo is called a culm. The culm is the support structure for the branches and leaves, and contains the main vascular system for the transport of water, nutrients and food. Culms also serve as food storage organs. The culm is made up of jointed segments, the joints are defined as nodes by the bamboo industry.

Teragren uses Moso Optimum 5.5 bamboo for the manufacture of its products. We only use the choicest section at the bottom of the culm and segment the raw material into slats or further process into strands. Teragren only harvests the culms when they reach full maturity and hardness. Culms can reach their full size and height in one year, but do not fully mature to their most stable and hardness potential until they are at the peak of age at between 5 ½ and 6 years of age.

The nodes appear randomly throughout the plank, much like small closed knot's would in a wood floor. This is a natural characteristic of the plank.

Flat Grain Slats: Show the most amount of visible nodes.

Vertical Grain Slats: Expose the sides of the bamboo strips and show less of the nodes.

Strand Woven: The strands are created from slats that are randomly split into narrower slats and then woven through each other. The nodes that appear are more random.

*NOTE: The appearance of nodes is an inherent natural characteristic of the product, and not considered to be a manufacturing defect.*

Teragren grading rules allow for filled holes, mineral streak, open checks, tight checks, and filled checks. Bird peck, pin worm hole, and beetle hole are acceptable (any insects are killed with Borate solution and in the drying process).

## Environmental Issues

Damage caused by inappropriate handling, environment, installation, or maintenance issues will not be considered in relationship to grade.

## Storage and Handling

Handle and unload bamboo flooring with care. Store in a dry place; make sure to provide at least a four-inch space using dry 4" x 4" stickers) or a dry pallet that provides enough clearance under boxes for proper air movement. Do not stack Teragren boxes directly on the subfloor when storing on job site or during acclimation process.

Prior to delivery of bamboo flooring, outside doors and windows must be in place. All concrete, masonry, plastering, and other "wet" work must be completed and thoroughly dry prior to flooring installation. Roofing and the exterior shell of the structure must be finished and weather tight with doors and windows installed. The wall coverings should be in place and all painting completed except for the final coat on the base molding. Room temperature and humidity should be consistent with year round conditions for at least one week prior to installation. When possible, install base molding after floor installation is complete.

HVAC MUST BE RUNNING WITH A ROOM TEMPERATURE OF BETWEEN 60°F TO 80°F AND RELATIVE HUMIDITY OF BETWEEN 35 AND 55%, maintained and constant during installation process and throughout life of the floor.

## Pre-Installation Inspection

### VISUAL INSPECTION

The first inspection is visual and basic. Is there water in the building? Are the doors and windows installed and the building weather tight?

### CLIMATE CONTROL

If heating and/or air conditioning with proper humidity controls are in operating condition, they need to be turned on. If it is not possible for the permanent system to operate, a temporary system that provides proper temperature and humidity conditions must be in place and remain in place until permanent climate control is operational.

### INSTALL FLOORING LAST

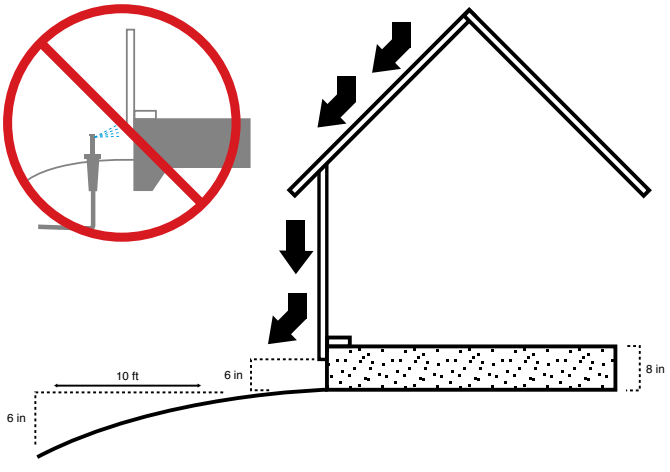
Bamboo floor should be the last trade in the house (before base boards are installed). All concrete, masonry, plastering/drywall, texturing, and painting/primer coats should be completed beforehand. Covering the floor while wet trades are in the house can lead to moisture condensation on the protective paper. Moisture can pull into the paper or be trapped under the surface of materials used to cover the floor. Paper coverings also allow dents and scratching to occur. Coverings held in place for more than 24 hours by blue tape can damage the floor. The adhesive in tapes contain Phthalates /plasticizers that have the ability to penetrate floor finishes and bond with the finish at the molecular level presenting a risk of pulling/damaging the finish when the tape is removed. Teragren recommends that built in cabinets and built in furniture be installed before installation of the floor. This prevents damage to the flooring, making any potential flooring repairs simpler to perform.

## Exterior Checks

1. Is exterior soil elevation 6" below edge of flashing?

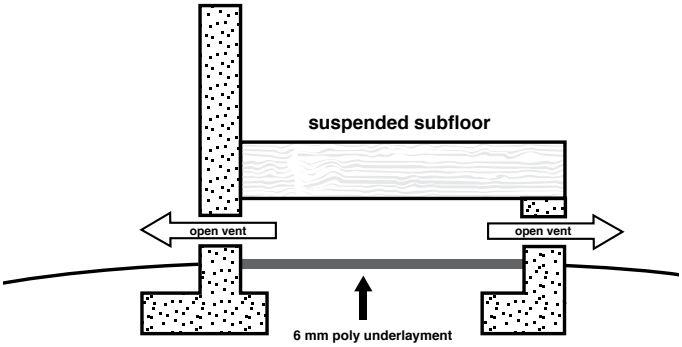
2. Does exterior slope away from foundation at a rate of 6" drop in 10' for soft landscaped areas and 3" drop in 10' for hard-paved areas?

*NOTE: Proper drainage away from the structure is absolutely critical to ensure weather-tight conditions and crucial to proper hardwood flooring performance. If structure is near a hill, the lot should be graded with a swale to move moisture off the lot and prevent it from coming in contact with the foundation.*



## Crawl Space Ventilation

Crawl space earth (or thin concrete slab) should be covered 100% by a vapor retarder of black polyethylene (minimum 6 mil) or any recommended puncture resistant membrane, such as Class C meeting ASTM D1745. Check local codes for any additional requirements. Size of available vents should equal to 1.5% of the square footage within the crawl space. Relative humidity should be consistent with interior of home. Moisture content of subfloor should not vary more than a 2% MC from the top of the subfloor to the bottom.




It may be necessary to install temperature/humidity activated exhaust fans to create more air movement in the crawl space. Uncontrolled humidity and moisture in crawl space will lead to mold and damage to the structure, as well as the bamboo floor. In these events, a contractor specializing in dehumidifying systems will need to be contracted to keep crawl space humidity within proper norms. This is more likely in high humidity areas. Ensure that clothes dryers are properly vented to the outside of the foundation. Check for signs of plumbing, both pressurized and non-pressurized/drain leaks.

*NOTE: Completely sealed crawl spaces (no exterior cross-ventilation) require a dehumidification system as part of the sealed crawl space design.*

## Basement Moisture & Humidity Control

Basements should be completely weather tight and have proper drainage away from the foundation walls in place to ensure that the basement remains dry.

1. Rain gutters must be in place to carry moisture away from the house. French drains are recommended, and basement walls should be properly sealed.

2. Relative humidity of basements should not be more than 10% higher than the upper floors.

3. Humidity control of the basement is vital to help control mold and prevent damage to the structure and bamboo flooring.

4. Basement walls should be inspected for cracks and excessive moisture content.

5. Drains must be placed at basement windows.

6. Direct sprinklers and irrigation systems away from the foundation. Sprinklers spraying the foundation edge can lead to moisture intrusion into structure. Drip irrigation systems for plant beds is recommended.

### EQUILIBRIUM MOISTURE CONTENT (EMC)

The moisture content of Bamboo and Wood fiber saturation point is a function of both relative humidity and temperature in the surrounding air. When Bamboo and Wood is neither gaining nor losing moisture, and equilibrium moisture content (EMC) has been reached.

Wood technologists have graphs that precisely tie EMC and humidity together but as a general rule a relative humidity of 25% would approximately have an EMC of 5%, and a relative humidity of 75% would have an EMC of approximately 14%.

A 50% swing in relative humidity produces an EMC change of approximately 10%. How that effects Wood and Bamboo flooring varies somewhat by species. However, this change in EMC will create a dimensional change in the material itself. A 5" wide solid plank would change by 1/8" / 25mm per plank. Over a span of 10 boards that would amount to 1 ¼" of expansion.

Teragren manufactures material to mimic what would be found in the middle of a 35–55% relative humidity environment (roughly 40% RH). Consequently, it is pre-acclimated to the green zone conditions found in the chart on page 8.

## Acclimation of Engineered Bamboo

The pre-installation inspection of the floor is to be completed prior to the beginning of the acclimation process. Open 2 to 3 boxes to ensure it is what was expected. Test fit the milling and dry lay several planks to ensure the product has no issues. See owner installer responsibility page 1. Do not open all the boxes and subsequently request replacement material.

Engineered Bamboo, just like wood flooring, is harvested from a living plant. They are both cellulose based materials and hydroscopic in their structure. As a living plant, the cell walls expand when exposed to moisture to store additional moisture, and the cell wall would conversely shrink when moisture in the cell dropped. This is a well defined biomechanical reaction to changes in relative humidity and corresponding EMC. This is why both wood and bamboo expand and contract with changes in the environmental relative humidity, or exposure to moisture.

**1. Establish Appropriate Climate Conditions:** Teragren bamboo flooring must be installed over a vapor barrier or vapor retarding system.

**2. Control Climate Conditions at Time of Acclimation:** Acclimation should occur in normal living conditions at the middle of the normal relative humidity swing for the area. In areas where relative humidity falls bellow 35%, humidity control must be added to HVAC /Climate Control Systems, to prevent floor from becoming too dry.

**3. Time Required for Acclimation:** For proper acclimation, flooring must be delivered to the job site a minimum of 48 hours prior to installation. Evenly distribute unopened boxes in a dry, climate controlled space. Evenly distribute unopened boxes in a dry climate controlled site. Leave a four inch space under the unopened boxes to ensure all boxes can acclimate to job site temperature. Do not store boxes on bare concrete, gypcrete or other Cementous surfaces, or stone, or tile surfaces.

Strand Woven Bamboo can require much more time to acclimate in extreme climate conditions, as much as 30 days may be required.

Humidity ranges and EMC vary geographically. Understanding the average conditions for your region is critical to the acclimation process. If an acclimated EMC is too low, the installed floor will over expand as the relative humidity goes up. If the acclimated EMC is too high the floor boards will gap excessively as the relative humidity drops later on. (See page 8)

Reminder: Time is only ½ the equation. Additional time may be required for acclimation where conditions are not well controlled.

*NOTE: A certain amount of humidity swing is considered to be normal and some tightness and gapping can occur in normal use.*

To maintain proper relative humidity levels, above 35% and below 55% RH, use of the following equipment is recommended. *Failure to maintain humidity range can result in damage to the bamboo floor.*

Air conditioner (of proper size and in working order) Dehumidifier (if required) to prevent relative humidity levels above 55% Whole House Humidifier (of proper size and in working order) (if required) to maintain relative humidity levels above 35%.

NOTE: Failure to properly acclimate or maintain a proper temperature and relative humidity with bamboo/wood flooring may cause excessive expansion, shrinking, buckling, or splitting. Proper acclimation of the floor is the responsibility of the homeowner/installer.

## MOISTURE METER CONVERSION FOR TERAGREN XCORA®STRAND WOVEN BAMBOO FLOORING & FOR PUREFORM® TRADITIONAL BAMBOO

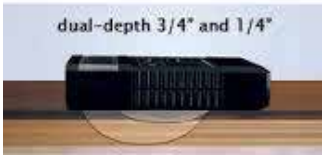
**ENGINEERED STRAND:** *Synergy Wide Plank*

**ENGINEERED TRADITIONAL:** *Studio*

The following table has been carefully developed to be compatible with Teragren Xcora® strand bamboo flooring. Moisture readings will vary slightly depending on temperature, density, and color. Expect accuracy to be with +/- 1.5 %.

The following meters have been calibrated to strand bamboo. The lab tests used strand bamboo acclimated to 45%RH at 80° F to establish a base line. In this controlled acclimated environment the moisture content of Teragren' s Xcora® strand bamboo tested at 8.3% EMC

## Lignomat





Ligno - Scanner SDM - Pin or Pin Less (Setting ¼ Depth)
Ligno - DuoTec BW - Pin or Pin Less (Setting ¼ Depth)
Ligno - VersaTec - Pin or Pin Less (Setting ¼ Depth)
Bamboo Standard Settings

- 16 Vertical Grain Natural
- 17 Vertical Grain Caramelized
- 18 Horizontal/Flat Grain Natural
- 19 Horizontal/Flat Grain Caramelized
- 20 Synergy Strand Natural
- 21 Synergy Strand Java & Chestnut

## Wagner


MMC205 Digital Shopline - Pin Less
MMC210 Digital Proline - Pin Less
MMC220 Extended Range - Pin Less

- 0.66 Vertical Grain Natural
- 0.67 Vertical Grain Caramelized
- 0.69 Horizontal/Flat Grain Natural
- 0.70 Horizontal/Flat Grain Caramelized
- 0.97 Synergy Strand Natural
- 1.0 Synergy Strand Java & Chestnut

## Delmhorst


Delmhorst - Total Check Plus – Pin Less or Pin
Delmhorst – J4 – Pin
Delmhorst – BD2100 – Pin Delmhorst – J200 - Pin
Delmhorst – 26ES – Attachment Option for Deeper Readings

## Delmhorst Conversion Chart

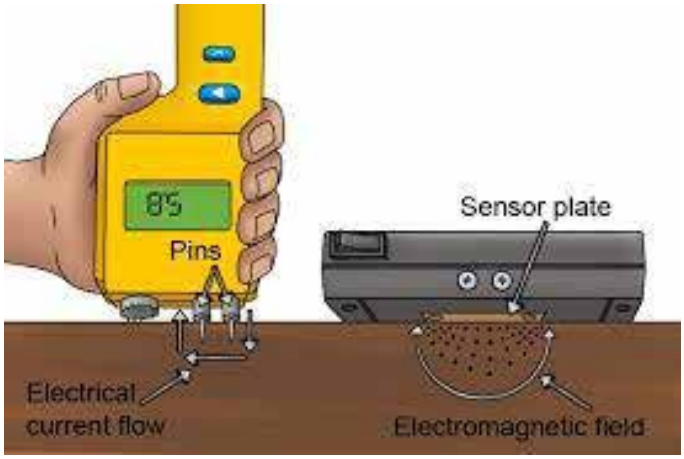
**Synergy Strand (All)**

| Meter Reading Douglas Fir Setting | Actual % Moisture Content |
|---|---|
| 6 | 3 |
| 7 | 3.5 |
| 8 | 4 |
| 9 | 4.5 |
| 10 | 5 |
| 11 | 6 |
| 12 | 6.5 |
| 13 | 7 |
| 14 | 7.5 |
| 15 | 8 |
| 16 | 8.5 |
| 17 | 9 |
| 18 | 9.5 |
| 19 | 10 |
| 20 | 11 |
| 21 | 11.5 |
| 22 | 12 |
| 23 | 12.5 |
| 24 | 13 |
| 25 | 13.5 |
| 26 | 14 |

**Flat Grain/Vertical Grain (All)**

| Meter Reading Douglas Fir Setting | Actual % Moisture Content |
|---|---|
| 6 | 6.3 |
| 7 | 6.6 |
| 8 | 6.9 |
| 9 | 7.2 |
| 10 | 7.2 |
| 11 | 7.5 |
| 12 | 7.8 |
| 13 | 8.1 |
| 14 | 8.4 |
| 15 | 8.7 |
| 16 | 9.0 |
| 17 | 9.3 |
| 18 | 9.6 |
| 19 | 9.9 |
| 20 | 10.2 |
| 21 | 10.5 |
| 22 | 10.8 |
| 23 | 11.1 |
| 24 | 11.4 |
| 25 | 11.7 |
| 26 | 12.0 |

## Pin vs. Pin Less – How they work




Relative Humidity levels required to maintain below moisture content:

| | RH | 5% | 10% | 15% | 20% | 25% | 30% | 35% | 40% | 45% | 50% | 55% | 60% | 65% | 70% | 75% | 80% | 85% | 90% | 95% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| °F | °C | | | | | | | | | | | | | | | | | | | |
| 30° | -1.1° | 1.4 | 2.6 | 3.7 | 4.6 | 5.5 | 6.3 | 7.1 | 7.9 | 8.7 | 9.5 | 10.4 | 11.3 | 12.4 | 13.5 | 14.9 | 16.5 | 18.5 | 21.0 | 24.3 |
| 40° | 4.4° | 1.4 | 2.6 | 3.7 | 4.6 | 5.5 | 6.3 | 7.1 | 7.9 | 8.7 | 9.5 | 10.4 | 11.3 | 12.3 | 13.5 | 14.9 | 16.5 | 18.5 | 21.0 | 24.3 |
| 50° | 10.0° | 1.4 | 2.6 | 3.6 | 4.6 | 5.5 | 6.3 | 7.1 | 7.9 | 8.7 | 9.5 | 10.3 | 11.2 | 12.3 | 13.4 | 14.8 | 16.4 | 18.4 | 20.9 | 24.3 |
| 60° | 15.6° | 1.3 | 2.5 | 3.6 | 4.6 | 5.4 | 6.2 | 7.0 | 7.8 | 8.6 | 9.4 | 10.2 | 11.1 | 12.1 | 13.3 | 14.6 | 16.2 | 18.2 | 20.7 | 24.1 |
| 70° | 21.1° | 1.3 | 2.5 | 3.5 | 4.5 | 5.4 | 6.2 | 6.9 | 7.7 | 8.5 | 9.2 | 10.1 | 11.0 | 12.0 | 13.1 | 14.4 | 16.0 | 17.9 | 20.5 | 23.9 |
| 80° | 26.7° | 1.3 | 2.4 | 3.5 | 4.4 | 5.3 | 6.1 | 6.8 | 7.6 | 8.3 | 9.1 | 9.9 | 10.8 | 11.7 | 12.9 | 14.2 | 15.7 | 17.7 | 20.2 | 23.6 |
| 90° | 32.2° | 1.2 | 2.3 | 3.4 | 4.3 | 5.1 | 5.9 | 6.7 | 7.4 | 8.1 | 8.9 | 9.7 | 10.5 | 11.5 | 12.6 | 13.9 | 15.4 | 17.3 | 19.8 | 23.3 |
| 100° | 37.8° | 1.2 | 2.3 | 3.3 | 4.2 | 5.0 | 5.8 | 6.5 | 7.2 | 7.9 | 8.7 | 9.5 | 10.3 | 11.2 | 12.3 | 13.6 | 15.1 | 17.0 | 19.5 | 22.9 |
| 110° | 43.3° | 1.1 | 2.2 | 3.2 | 4.0 | 4.9 | 5.6 | 6.3 | 7.0 | 7.7 | 8.4 | 9.2 | 10.0 | 11.0 | 12.0 | 13.2 | 14.7 | 16.6 | 19.1 | 22.4 |
| 120° | 48.9° | 1.1 | 2.1 | 3.0 | 3.9 | 4.7 | 5.4 | 6.1 | 6.8 | 7.5 | 8.2 | 8.9 | 9.7 | 10.6 | 11.7 | 12.9 | 14.4 | 16.2 | 18.6 | 22.0 |

Teragren bamboo flooring is factory acclimated to a moisture content of 7-9% which correlates to a relative humidity level of 35-55% at 60 to 80 degrees F

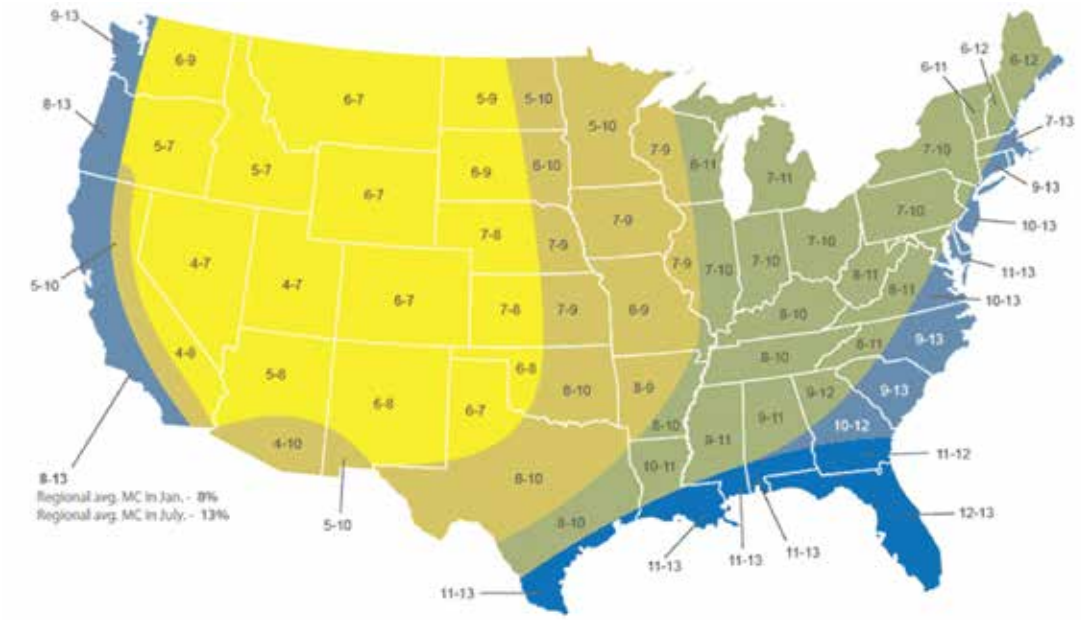
## EMC Further Explained:

- Structure is maintained at a temperature of 70°F
- Maintained and current relativity is 40%RH
- The combined temperature of 70°F and 40%RH – Sustained and constant conditions would produce an EMC 7.7%
- This value is represented in the shaded area in the chart.

### EMC - Geographic Map of the Continental United States

NWFA map. Source: The US Department of Agriculture Forest Products Laboratory

- Each region has an EMC readings of both high and low. This represents a seasonal swing in moisture content.
- Where the EMC readings are below 6.8% humidity, control must be added to maintain structural integrity of floor in the dryer months. Humidification systems make heating more efficient and are conducive to enhanced human respiratory health.
- The EMC range per region indicated, pertains to all wood and bamboo species.
- Each region indicates the EMC for both January (the first number) and July (the second number)
- In regions where the moisture content of the material would exceed 10% EMC, HVAC systems must remove some of the humidity for optimum performance. Most air conditioning units dehumidify as part of the cooling process. Additional dehumidification can make the HVAC system more efficient and cost effective to run.




*NOTE: Actual EMC may differ significantly from the numbers indicated on the geographic map. The NWFA indicates that the map cannot be used as a basis for installation. However, it is made available so differences in EMC and the effects of EMC change can be better understood.*

## Radiant Heat

Subfloor level tolerances listed in this publication also apply to radiant heated subfloors.

ELECTRIC RADIANT HEAT SYSTEMS ARE NOT APPROPRIATE FOR TERAGREN BAMBOO FLOORS.

NAIL DOWN TO WOOD SUBFLOOR WITH RADIANT COMPONENTS IS NOT AN AUTHORIZED INSTALLATION METHOD.

PASSIVE RADIANT HEAT SYSTEMS ARE NOT SUITABLE FOR THE INSTALLATION OF TERAGREN BAMBOO FLOORS. PASSIVE SYSTEMS DO NOT HAVE THE ABILITY TO MOVE THE AIR OR CONTROL HUMIDITY LEVELS.

*CAUTION: Surface temperature of the bamboo floor should never exceed 80º F. Temperature sensors must be integrated into system as a fail-safe to prevent excessive heat and damage to the hardwood floor.*

*NOTE: Area rugs placed over radiant heat slab will create heat retention in the floor. This may*

*result in that area exceeding optimum temperature, and causing slightly larger gaps and minor cracks/splits in the floor under the rugs.*

## FLOATING INSTALLATION / RADIANT HEAT

Teragren Bamboo recommends Eternity Premium Underlayment pad or comparable pad.

The tongue and groove must be glued together using White PVA-D3 (polyvinyl acetate) tongue and groove adhesive.

## RADIANT HEAT APPROVED PRODUCTS - Nail Down Not Allowed Over Radiant Heat.

Approved for Float

- Synergy Wide Plank (on/above or below grade)
- Studio (on/above or below grade)
- Craftsman II (on/above or below grade)

*NOTE: Välinge locking system not approved for nail down or glue down*

## GLUE DOWN CONCRETE THERMAL MATS / RADIANT HEAT

Adhesive must be approved by adhesive manufacturer for use with radiant heat. Adhesive system must employ a vapor control component designed to be used in conjunction with the adhesive by the adhesive manufacturer. Thermal mass must be Portland based concrete product and rated at a compressive strength of 2500 psi or greater. Thermal mats with less than 2500 psi compressive strength must use floating installation method unless otherwise specified by adhesive manufacturer. Follow adhesive manufacturer's instructions as their psi ratings may be different. Follow all adhesive manufacturer's installation specifications.

Hydronic warm water systems installed in accordance with NWFA specifications are acceptable. Tubing must be a minimum of 1 1/4" below the surface of the concrete thermal mass (no electric mat systems are acceptable). *See Teragren Bamboo, Radiant Heat Guide for more information.*

## HYDRONIC SYSTEMS IN A WOOD Subfloor

Assembly must include an aluminum transfer sheet to ensure even distribution of heat. Aluminum tube hanging systems must cover the entire distance between the joists on the bottom of the subfloor.

## RADIANT HEAT / WOOD SUBSTRUCTURE AND ALUMINUM THERMAL TRANSFER SHEET

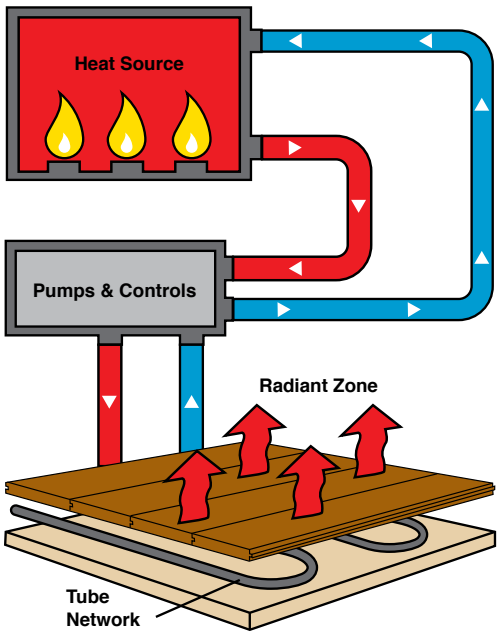
Two weeks prior to arrival of bamboo flooring at job site, the radiant heat system should be gradually brought up to 70º F. Moisture levels allowable in wood subfloor are not to exceed 12%. Once systems have reached optimum conditions, Teragren solid bamboo flooring should be brought to job site; not before.

## WOOD FLOOR ACCLIMATION PROCESS FOR RADIANT HEAT

Teragren Bamboo flooring is dried to a moisture content of approximately 7% -9% moisture content by volume. This is a stable moisture content, and it is important to adjust the indoor climactic conditions to fully support the moisture content found in the boards. A relative humidity rating of 35 to 55% at time of installation is required.

Allow opened boxes of Teragren solid bamboo flooring to stabilize in above environment for a minimum of 5 days to allow material to adjust to room environment. Additional acclimation may be necessary to get EMC to match environmental conditions. Room temperature should not vary more than 15º F season to season and relative humidity range between 35% to 55% should be maintained.

*For further information, see Teragren Bamboo Radiant Heat Guide.*



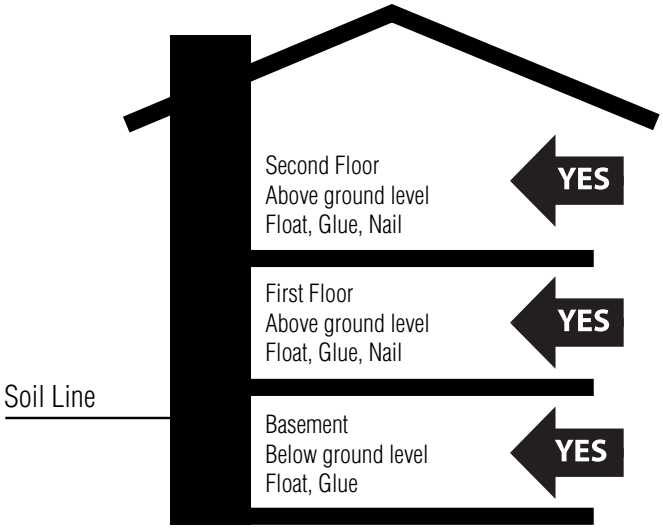

This diagram is a conceptual diagram of the basics of how radiant heat works. It is not a working diagram for installation purposes.

## Below Grade Installation?

A concrete slab is considered below grade when any part of the slab is below ground level. For example, a basement with a walk out is considered below grade. A house cut into a hill is also considered to be below grade if it isn't properly graded to create a drainage swale on the lot. Below grade slabs are not suitable for installation of solid bamboo.

Solid bamboo can be installed on or above grade.

*Solid bamboo flooring is not suitable for below grade installation.*




## Subfloor Moisture Testing CONCRETE

Since bamboo flooring is not compatible with wet conditions, Teragren Bamboo does not warrant against moisture related issues or related damage under warranty (See Teragren Bamboo Maintenance & Warranty Guides). This is an industry standard, and manufacturers do not offer moisture warranties. However, moisture warranties are offered by various adhesive manufactures.

*NOTE: Due to the porous nature of concrete, vapor emissions are subject to change over the lifetime of the installed floor. Slab moisture emissions are a common cause of damage to hardwood and bamboo floors. Due to the potential for concrete moisture emissions to increase/decrease over time, and the absence of moisture warranties for bamboo flooring, choosing an abatement system is prudent.*

Underlayments offer moisture warranties for moisture abatement that will be conditional. Follow their directions closely to ensure compliance and full warranty coverage. Generally speaking they do not allow more than 3lbs. or 75% RH vapor emission from slab.

*ADDITIONAL NOTE: Teragren Bamboo makes no guarantees regarding the performance of any adhesive/ vapor abatement system.*

The installer is fully responsible for proper installation, and the moisture warranties are fully the responsibility of the moisture abatement system chosen for the job.

*NOTE: Hallmark 2 Luxury Vinyl Concrete Sealer is approved for use beneath underlayment pads, and can provide significant moisture protection under pad. See page 10.*

## NWFA & Industry Standards

The NWFA (Industry standard) uses the following test methods to determine optimal conditions for installation and performance of a hardwood or bamboo floor. Some adhesive manufacturers offer systems that create a vapor barrier to protect the wood or bamboo flooring from moisture emissions coming up through the slab. Many adhesive manufacturers require the tests listed below to be performed prior to installation of the floor. Carefully read and follow the adhesive manufacturer's instructions.

CALCIUM CHLORIDE: ASTM F1869
Under ideal conditions, the slab should not be emitting more than 3 lbs. per 1,000 square feet per 24 hour period. Carefully follow the instructions in the test kit to ensure that you get accurate results.
*NOTE: The slab emissions can vary based on soil humidity and room temperature. Consult adhesive manufacturer's directions for the moisture abatement system they recommend.*

HUMIDITY PROBE & DIGITAL METER: ASTM F2170
Widely used in Europe, this test determines the amount of humidity in the slab. This is an effective way to determine a slab's potential for emitting moisture. Follow all meter manufacturer's guidelines for performing testing. Under ideal conditions, the slab readings should be 75% RH. CAUTION: Post Tension slabs require special care to avoid cutting cables in slab. Cutting post tension cables can cause serious structural damage and potential fatalities.

New concrete slabs require a minimum of 60 days drying time before covering them with a bamboo floor. The slab must be fully cured. Slab must be comprised of Portland-based mix with 2,500 PSI of compressive strength.

## Subfloor Preparation CONCRETE

Subfloor tolerance for a flat surface is 3/16" within a 10' radius and 1/8" in a 6' radius. These are industry standards established by NWFA. Use a straight edge to determine if subfloor requires grinding or filling.

*NOTE: A quarter is approximately 1/16" thick and can be used as a basic thickness gauge, in conjunction with a straight edge. Grind high spots and fill low spots with adhesive manufacturer's recommended filler.*
*NOTE: Use the filler method recommended by the concrete sealer manufacturer.*

***CAUTION: ASBESTOS***
***State and Federal agencies have determined that asbestos is a respiratory carcinogen. Avoid sanding or scraping of old vinyl, linoleum and VCT as they may contain asbestos. Take proper precautions and contact an asbestos abatement company to remove any old vinyl or vinyl tile floors containing asbestos. Cut-back adhesive and other types of adhesives can also contain asbestos.***

## California Prop 65 Warning

Drilling, cutting, and grinding of concrete generates concrete dust, containing crystalline silica, a substance known to the State of California to cause cancer, birth defects, or other reproductive harm. Avoid inhaling concrete dust by wearing a dust mask or other safeguards for personal protection. CA HEALTH AND SAFETY CODE 14808-60-7: Wear appropriate NIOSH designated dust mask to reduce risk of dust inhalation. Wear proper eye protection and avoid prolonged contact with eyes and skin. In the event of eye irritation, flush with water for 15 minutes and seek medical attention!

## Clean the Subfloor

After all prep work is completed, sweep and/or vacuum the subfloor. Dust and dirt can affect the adhesive or vapor barrier's ability to adhere to the slab.

When moisture content exceeds the limits authorized by underlayment pad, Hallmark 2 can be roller applied to increase the vapor resistance of slabs on or below grade.

## Hallmark 2 Two Part Epoxy Sealer

For use when concrete subfloor moisture conditions do not meet standards of underlayment pad manufacturers.

Hallmark 2 is applied after all adhesive removal is completed, all high spots have been ground down and before any leveling agent is applied. Any leveling agent must be Portland based, read leveling agent manufacturing instructions for application over 2 part epoxy sealer.

*NOTE: Hallmark 2 not for use on radiant heat, lightweight concrete spale, or gypcrete.*


Moisture barrier up to 18 lbs. on Calcium Chloride or 97% RH In-Situ Probe Test (using foam roller with max coverage of 140 sf per gallon.
OR
Moisture barrier up to 25 lbs. on Calcium Chloride or 100% RH In-Situ Probe Test (using #22 trowel with max coverage of 70 sf per gallon. Contains no water, solvents or VOC's.

Document all conditions of the slab, test results, and retain for your records.

FOR USE WITH:
Under 2mm underlayment pads to increase vapor abatement properties of the pad. See Hallmark Floors

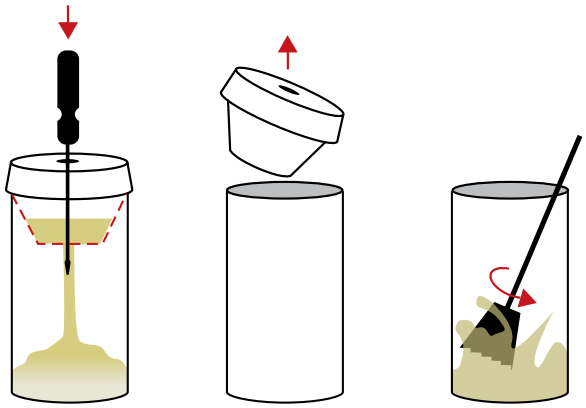
DESCRIPTION: Hallmark 2 Sealer is a two component, epoxy reaction, resin-based sealer for flooring installation over high moisture subfloors. Hallmark 2 Sealer will lower moisture levels from a high moisture subfloor to an acceptable level, and will bridge minor cracks in the subfloor. Hallmark 2 Sealer spreads easily, and creates a dust free surface for your flooring installation. Hallmark 2 Sealer increases the bonding of applied primers, leveling compounds and/or adhesives

PRE-INSTALLATION: A successful installation requires proper preparation of the subfloor. Read and understand all applicable guidelines for subfloor moisture, and layout of flooring. All flooring to be installed must meet the flooring requirements before the floor is installed.

Subfloor: Do not apply Hallmark 2 Sealer onto a visibly damp or wet surface. Examine concrete subfloor for color, cleanliness, porosity and preexisting residues PRIOR TO installation. Check the concrete subfloor for any contaminants and follow installation guidelines for proper subfloor preparation. It must be sound, permanently dry, clean, free of old adhesive or adhesive residue, as well as resistant to pressure and tension. Moisture content of all floors must be measured before installation.

Subfloor PREPARATION: The condition of the subfloor will determine which type of mechanical treatment is required (e.g. wire brushing, sanding, grinding or shot blasting). Dust, paint, curing compounds, sealers, residual adhesives or other surface pollutants MUST be removed. Clean the surface with an industrial vacuum cleaner, tack or damp mop floor before application. Cracks and gaps must be treated prior to application.

MIXING OF COMPONENTS: Lid contains the hardener. Pierce all the way through the plastic disc in center of lid and the bottom of the lid using a long screwdriver or similar tool. Let the hardener flow into the lower part of the bucket. Remove the lid, and using a mixing paddle, mix both for at least 3 minutes using an electric drill with less than 300 rpm until an even color is reached. Mix slowly using the correct mixing paddle to avoid trapping air. Make sure to mix along wall and bottom of the container as well. Temperature of both components should be at least 50°F before mixing. Empty the entire contents of the pail onto floor immediately after mixing to prevent sealer from heating up and drying in the pail.



LIMITATIONS: When using product for purposes not listed in these instructions regarding Hallmark 2 Sealer, Teragren denies any and all responsibility for any problems and/or damages without prior written approval from Hallmark. Sealer will not prevent moisture damages from hydrostatic pressure, underground springs, compromised vapor barriers underneath the slab, damaged water pipes, sinks, icemakers, faulty plumbing, flooding, etc.

FEATURES: Seals slabs with any moisture content, contains no solvents, contains no VOC, contains no water, high solids content, ozone friendly, freeze/thaw stable, contains no isocyanates.

BENEFITS: Low odor, high spread rate, spreads easily, excellent penetration of subfloor (higher temp and will shorten drying time).

CAUTION: Watch pot life during installation.

LONG TERM FEATURES: Resistant against aging, improves bonding of urethane-based adhesives, improves bonding of polymer adhesives, moisture barrier up to 18lbs. or 97% RH w/roller, moisture barrier up to 25 lbs. or 100% RH w/trowel, suitable for radiant heat systems.

APPROVED SUBFLOORS: Concrete slabs, wet concrete slab up to 25lbs/24hrs/1,000SF

APPROVED APPLICATORS:
Foam Roller: up to 140 sf/gal #22 Trowel: 7/64" x 5/64" (up to 70 sf/gal)

DRYING TIME: 12-18 hours, completely cured after 7days

TEMPERATURE DURING INSTALLATION: 50°to 90°F

RELATIVE HUMIDITY DURING INSTALLATION: 30% to 80%

COLOR (HARDENER): Yellow

POT LIFE: Approx. 25 min at 70°F (21°C)

PH VALUE OF CONCRETE: Up to 14

WATER VAPOR TRANSMISSION (ASTM E-96):

0.012 grams/hour * m2

0.06 lbs/24 h * ft2 inHg

PERMEANCE(ASTM E-96):

0.026 grams/24h * m2 mmHg

0.04 grams/h * ft2 inHg

STORAGE: Above 14°F

Synergy Wide Plank & Studio are designed for floating installation only: Installing over Existing Floor Coverings on Concrete Perimeter-glued resilient vinyl, VCT, and rubber tiles can be acceptable substrates, and do not always need to be removed. If they are sound, smooth and flat they will accept an underlayment pad. If they are not sound, smooth and flat they must be removed.

Teragren is not responsible for performance or suitability of existing flooring products that are not removed from concrete.

As indicated above, the surface must be sound, tight, and free of paint, oil, existing adhesives, wax, grease and dirt.

Terrazzo and ceramic tile must be sufficiently scuffed to assure adhesion. Portland based products must be used to comply with flatness requirements of 3/16" in a10' radius or 1/8" in a 6' radius. See adhesive manufacturer's guidelines.

Existing vinyl, tile, or terrazzo are not considered to be vapor barriers, and can still transmit unacceptable moisture levels to hardwood flooring. Existing hardwood flooring must be removed prior to the installation of a new wood floor on concrete.

1. Roller Application: Pour mixed Hallmark 2 in streams of about 4" wide and roll evenly with 1" foam roller on to concrete subfloor.

2. Trowel Application: Pour mixed Hallmark 2 in streams of 8" wide and pull the product evenly with across concrete subfloor with Hallmark #22 trowel.

## Subfloor Moisture Testing WOOD

Remember: the top and bottom of the subfloor should vary no more than 2%. Wood substrates must have a moisture reading of no more than 12% when using Lingomat, Tramax, Delmhorst, or equivalent moisture meter, and be within 4% of the moisture content of the flooring to be installed.

## Subfloor Preparation WOOD

Wood subfloors need to be well nailed or secured with screws. Nails should be ring shanks, and screws must be countersunk. The wood subfloor needs to be structurally sound (i.e. without loose boards, vinyl, or tiles). Subfloor tolerance for a flat surface is 3/16" within a 10' radius and 1/8" in a 6' radius. These are industry standards established by NWFA.

Engineered subfloor panels, must be ANSI-rated plywood, OSB (oriented strand board) of specified thickness to meet joist spacing specifications listed below, or sound solid lumber subfloor that is a minimum of 3/4" thick and dry.

1. For panel products subflooring, check for loose panels and re-nail or screw down loose panels securely. Nails and screws must be counter sunk.

2. Ensure that there is proper expansion space (1/8") between the panels. If panels are not tongue and groove and do not have sufficient expansion space, it may be necessary use a circular saw to create the specified space. *Do not saw through joints on tongue and groove subfloors.*

3. Check for delamination or damaged areas to subfloor and repair those areas as needed.

4. Make sure subfloor is free of debris before beginning installation.

5. Acceptable Panel Subfloors: Truss/joist spacing will determine the minimum acceptable thickness of the panel subflooring.

a. Truss/joist spacing of 16" (406cm) o/c or less, the industry standard for single panel subflooring is a minimum of 5/8" (19/32", 15.1mm) CD Exposure 1 plywood subfloor panels or 23/32" OSB Exposure 1 subfloor panels, 4' x 8' panels.

b. Truss/joist spacing of more than 16", up to 19.2" (488mm) o/c, the standard is a minimum ¾" (23/32", 18.3mm) tongue and groove CD Exposure 1 Plywood 4' x 8' sheets glued and mechanically fastened.

c. Truss/joist spacing of more than 19.2" (488mm) o/c up to a maximum of 24" (610mm) requires a minimum 7/8" tongue and groove CD Exposure 1 plywood subfloor panels, 4' x 8' sheets, glued and mechanically fastened, or nominal 1" OSB Exposure 1 subfloor panels glued and mechanically fastened–or two layers of subflooring.

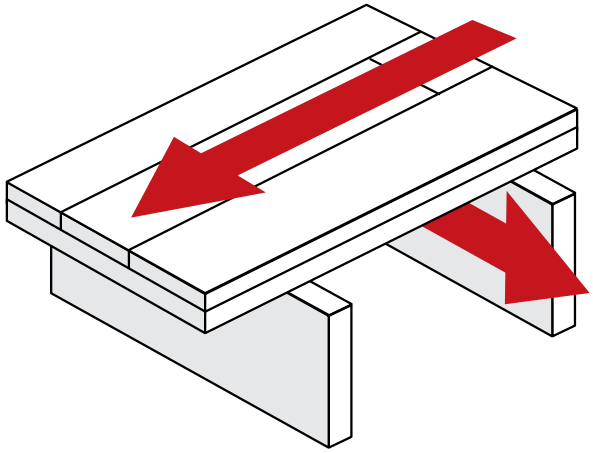
### JOIST CROSS-BRACING

A subfloor that is not thick enough to support the span of the joists will cause unacceptable subfloor deflection. An alternative to adding additional plywood on top of the subfloor would be to cross-brace between the joists. The cross-bracing would be done at the appropriate distance on center to meet specification and bring the deflection within proper tolerance.

Check with the joist or truss manufacturer to determine if cross- bracing is allowed with that system. Should it not be compatible with the joist or truss manufacturer, sheeting the subfloor with a second layer of CD or better grade plywood would then be the only option. (See double layer subfloors section).

### DIRECTION OF INSTALLATION IN RELATION TO JOIST DIRECTION.

The best application is at a 90° angle across the joists. This provides for best stability of the floor. As an alternative, the floor can be installed at a 45°angle to the joists. The floor cannot be installed in the same direction as the joists without installing an additional sheet of plywood on top of the existing wood subfloor.



### DOUBLE LAYER SubfloorS

When subfloor does not meet thickness standards for span between joists, a second layer of plywood or OSB is required to stiffen subfloor. See item C of previous section. The second layer should consist of nominal ½" (15/32", 11.9mm) CD exposure 1 plywood subfloor panels, 4' x 8' sheets, depending on how much correction of deflection between joists is necessary.

The top layer of plywood should be offset by 2" from joints in first layer of subfloor, and installed in the opposite direction to the bottom subfloor panels. Glue top and bottom layer together with construction adhesive and screwing in to the truss/joist system every twelve inches. Additionally, nail (ring shank) or staple layers together on a minimum 12" grid pattern.

### EXISTING WOOD FLOOR – ON WOOD Subfloor

When installing over an existing solid hardwood floor already attached to the wood subfloor, ensure that the existing floor is sound and firmly attached to subfloor. Install material at a 90° right angle or 45°angle (across grain) of existing hardwood floor.

*NOTE: Do not install in the same direction as existing floor. Do not install over wood flooring glued to concrete.*

# Getting Started

## 1. Select Installation Type

ABOVE GRADE WOOD Subfloor: Float

WOOD SUBFLOOR WITH CRAWL SPACE/BASEMENT:

Float,

ON/ABOVE-GRADE CONCRETE: Float,
ABOVE GRADE LIGHTWEIGHT CONCRETE GYPCRETE: Float, Glue (see adhesive manufactures installation instructions for lightweight concrete/ gypcrete installations)

**RADIANT HEAT: Float**
NOTE: Floating systems must use good quality underlayment pad with moisture barrier. If using over radiant heat make sure pad manufacturer authorizes their product for radiant installations.

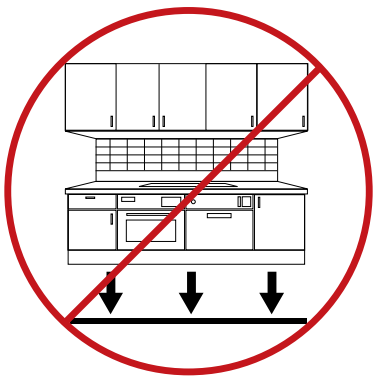
Nail down not authorized for Radiant Heat Wood Subfloor Applications. Any wood subfloor that contains radiant tubing of any kind is not appropriate for nail down application!

## 2. Cabinets & Appliances

FLOATING: Cabinets and built in appliances should never be installed on top of the floating bamboo floor. Floating floors require unhindered expansion space in all directions.

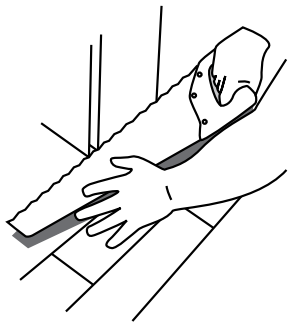
Bamboo flooring should be installed at the same time as carpet and after the following: finishing walls, cabinet installation, appliance installation, tile & counter top installation.

Standard refrigerators and kitchen oven/range are acceptable for placement on top of the wood floor. Use caution when moving appliances by using a proper furniture dolly, air sled, 1/8" Masonite with glossy side down, or plastic glides designed for movement of heavy appliances. Failure to follow these precautions will damage the floor.



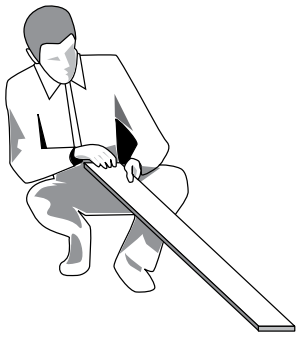
## 3. Undercut All Door Jambs/ Moldings

Remove all shoe and base molding to ensure adequate expansion space. Use scrap piece of flooring to establish height of cut. Make allowances for adhesive or underlayment thickness when establishing height of cut.



## 4. Visual Inspection of Boards

Visually inspect boards for any defects prior to installation. Verify that homeowner has seen product and approves proceeding with installation of the floor.



## 5. Open Multiple Boxes

Always work from multiple boxes simultaneously and blend the boards throughout the installation. This is especially important with mixed production dates. Teragren Bamboo has very good color consistency, and mixed production dates is generally acceptable for installation. Working from multiple boxes/production dates helps achieve a good blend of color.

*NOTE: As good as color consistency is, still check in the event they are not a good blend with each other. Mix a box from each production run together to determine if mixed dates are acceptable and match each other well. Perform check prior to acclimation.*

## 6. Blend Boards to Moldings

Before you get started, inspect the moldings. At beginning of installation, set aside those boards that best blend to the transition moldings on job.

## 7. Select a Starter Wall

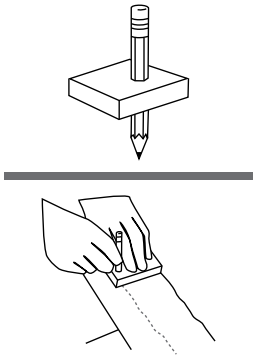
It is recommended to start the installation along an exterior wall. Check to make sure the wall is straight and square to the room. Start in corner with locking strip (groove end) facing the room.

## 8. Starting Line

Cut blocks to use against side and end walls to maintain ½" minimum expansion space. Use of adjustable spacers may be needed to help maintain a straight line.

## 9. Irregular & Out-of-Square Walls

Scribe cut the first row to match variations in the wall. A scribe can be created by drilling a hole in a scrap piece of wood and inserting a pencil. The starting row can then be cut to compensate for an irregular wall or to help minimize the appearance of an out of square room by splitting the difference between the two walls.



## Installation Alert

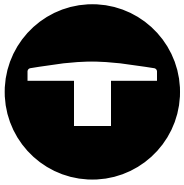
Do not use rubber mallets or hammers on the finished edge of the floors. Do not kick the floor into place. Mallets and hammers damage the finished edge and kicking can scratch the floor. Make sure mallet driven gun is not damaging the side of the board.

Use overlapping nylon tapping block for glue down. Use a flush edge nylon tapping block for nail down and for floating installations.

# Floating Floor Installation: Installation Tools Float/Lock (FL)

Tape measure, pencil, chalk line, table saw, cut-off saw, jamb saw, tapping block, pull bar, spacers, hammer, safety glasses, hearing protection, utility knife, wall spacers, straight edge, broom, speedy square, hardwood floor cleaner, and shop vacuum.

*NOTE: For floating floor, T-Molding must be used between rooms/doorways, and lip-over stair nose, lip over reducer and baby threshold must be used for other transitions.*



Install a vapor barrier or vapor retarder over the entire subfloor surface following closely the manufacturer's recommendations. Next, roll out 5/64" (2mm) padding (underlayment) one roll at a time over the vapor barrier or vapor retarder, being careful not to poke holes through or damage either material during installation. Run padding up walls 1" to 1-1/2" (25.4 to 38.1mm) and secure in place with tape. Join padding sections to one-another with tape. Make sure to tape down all loose edges. Other approved floating floor underlayment materials such as cork may be used. Follow underlayment manufacturer's installation instructions.
*NOTE: flexible underlayment must not exceed 5/64" (2mm) in thickness.*

*NOTE: Incorrect subfloor tolerances or the use of an underlayment/ padding thicker than 5/64" (2mm) may result in excessive plank movement causing damage to the flooring and/or friction induced noise such as "popping creaking or squeaking". Squeaks are associated with excessive movement, not a manufacturing defect.*

Measure the room so that the quantity of flooring required is known (length x width = square feet). If the last board required is too narrow in width, it may be necessary to install length-wise cut boards on both sides of the room to give it an overall balanced look. Ensure that the floor will fit under doors and skirting strips. Existing skirting strips may have to be removed during installation to allow for the expansion perimeter. Ideally, the flooring should be installed parallel to the longest dimension of the room.

In a square room, the long joints should (preferably), follow the path of the incoming light. Allow for a minimum expansion space of 1/2" (13mm) around the perimeter of the installed flooring.

**OVERSIZED ROOMS**

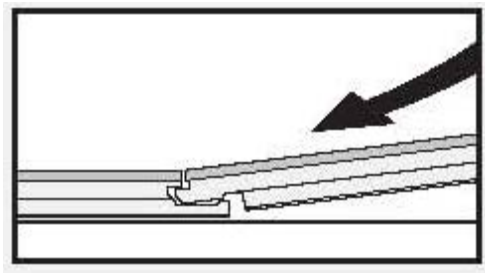
For floors larger than 16' (4.87 meter) in any one direction, leave an additional expansion space of 1/8" (3.2mm) on the edges for each 48" (1.2 meter) of installed flooring. For example, a 24' (7.3 meter) square room would require about 3/4" (19mm) expansion on all sides.

Rooms larger than 40' (12.2 meters) wide (boards running length of room) require an expansion joint in the middle of the room such as could be provided by leaving an intentional gap covered by a t-mold (or other flat molding) or other accessory piece. Any rooms that are not square (such as a T, L, F, or U shaped room) must have non- parallel areas separated by an expansion joint.

**All door opening must have an expansion joint between rooms. Under no circumstances should the floor's ability to move freely be restricted.**

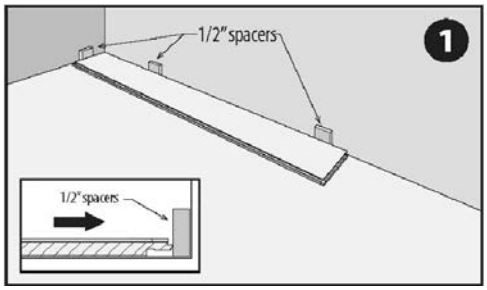
## 1. FL

Start in a corner of the room with the locking strip (groove end) facing the room.



## 2. FL

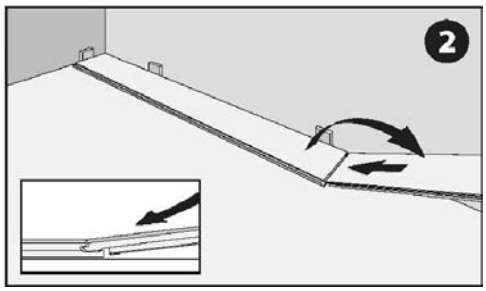
Using spacer wedges as required, maintain a 1/2" gap between the wall and the planks being installed. Install the first plank.



## 3. FL

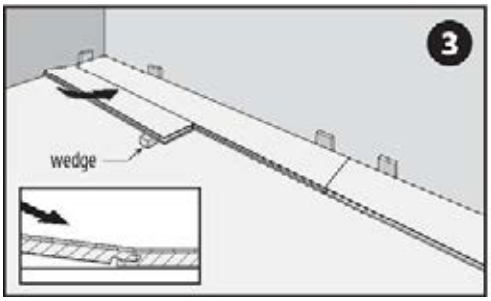
Install the second plank pressing the end of the second floorboard in at an angle to the first one and then laying it down flat on the ground to engage the locking mechanism. Continue with this method until you are ready to install the last plank of the first row. Cut the last plank of the first row to size using a rotary saw with a carbide blade then install as done for the previous planks, leaving a ½" gap at the end. After the first row is complete, ensure that all edges are even and parallel.

*NOTE: It is possible to fine-tune the gap between the long sides and the wall later, after the first three rows have been installed.*



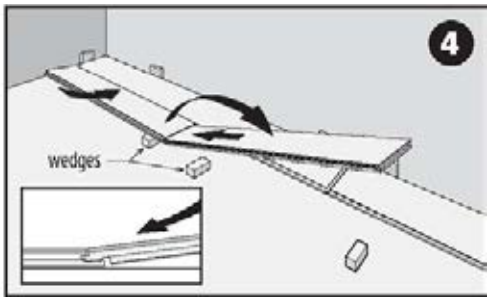

## 4. FL

Start the second row beginning with (if available) the piece left over (cut off ) from the first row (piece must be at least 20" in length). If the piece is too short (or if there is no leftover piece), start with a new board, cut in half. Always ensure that the end joints are staggered at least 20 inches. Maintaining a ½" gap between the end of plank and the wall, insert the long edge of the plank into the adjacent plank of the first row push forward and press down at the same time to fully engage the locking mechanism.



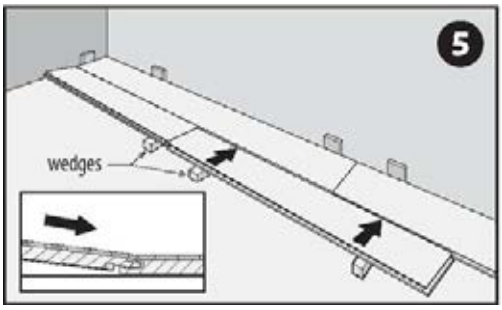

## 5. FL

With the plank resting flat on the floor, ensure there is no gapping on any of the joints. Next, lift the end of the plank and rest it on an installation wedge so that it is not lying flat on the floor Insert the end of the next plank into the end of the previously installed plank, lowering the plank until it is parallel to the ground with the long edge of the plank resting on the edge of the first rows' locking mechanism. Rest the end of this plank on an installation wedge so that the entire edge of the plank is at the same angle as the end of the first plank.



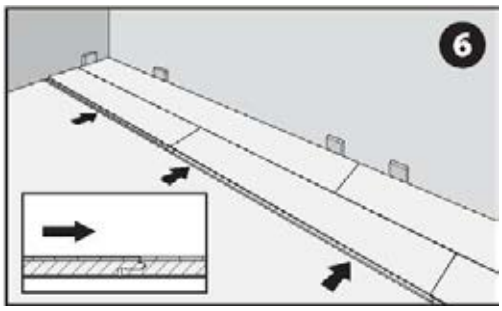

## 6. FL

Slowly and evenly push the entire length (the long edge) of the second planks' locking mechanism fully into place using a tapping block if required. Once completely inserted, remove all wedges and press the entire plank down to lock the plank. Use a rubber mallet and a tapping block to ensure all edges are perfectly mated.



## 7. FL

Lift up the very end of the newly installed plank and place an installation wedge underneath it in preparation for installation of the next plank. Continue to install the whole row.



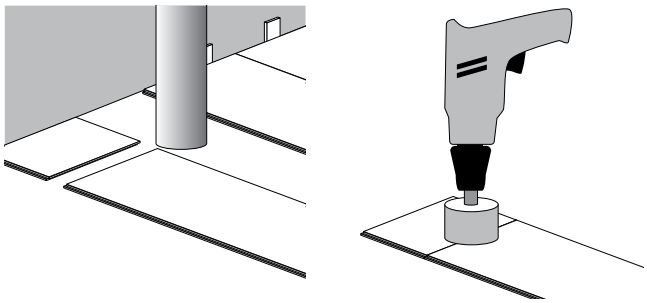

## 8. FL

When the entire row is completed, remove all wedges and review the row to ensure there is no gapping and that all locking mechanisms are fully engaged (all planks are perfectly flat).
*NOTE: Never hammer planks without using a tapping block or damage to plank edges will occur.*

Installation around pipes or columns:
Drill holes and saw out flooring as required to make room for any exposed structure or pipe. Note: holes around pipes or other items must be at least 3/4" greater in diameter than the pipe or structure.

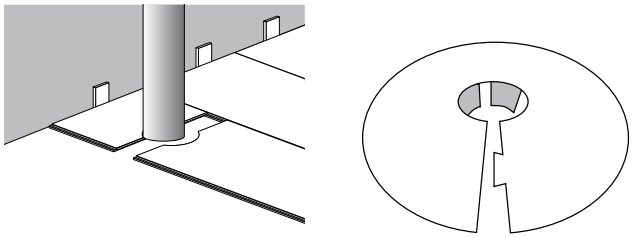
## 9. FL

Drill a hole through an end joint (do not use planks without end locking mechanism). Make sure side and end lock are fully engaged and use temporary bridge and tapping block on sides and ends. Use caution and tap gently on plank edge with block and hammer.



## 10. FL

Wrap the pipe with a radiator pipe collar to cover expansion space. Plastic collars are available at home improvement stores and plumbing supply stores. Wood collars are specialized and can be located at some hardwood flooring distributors, or specialized wood websites.



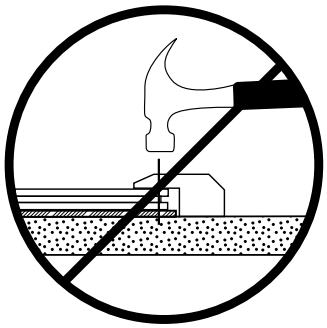
## 11. FL Trim Last Row

Trim last row to fit and pull into place with pull tool. Tape last several rows in place to prevent accidental movement and opening of side joints.

## 12. FL Install Lip/Over Transition Moldings

CAUTION: Do not attach lip/over moldings directly to the edge of the floor. Fasten transition lip/over moldings to the subfloor only.

Attaching the lip/over to the edge of the floor prohibits the free movement of the floor.



## Clean Up

A. Clean up any adhesive or glue residue immediately. If glue or adhesive is allowed to dry on the floor's surface, it can damage the finish when it is removed.

B. Completely remove any delicate surfaces painter's tape (never use masking tape) within 24 hours of application. If direct sunlight is hitting tape, it must be removed within 12 hours.

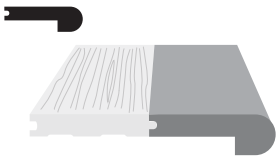
C. Adhesive residue, glue residue, and shoe marks can be removed with mineral spirits. NuOil®: Follow immediately with NuOil® Natural Oil Cleaner to remove any mineral spirit residue. TrueMark Poly/Glaze Tek® Finish: Follow immediately with TrueClean® Floor Cleaner to remove mineral spirit residue.

D. Remove dust and dirt regularly during installation and upon completion with a soft brush attachment on a shop vacuum.

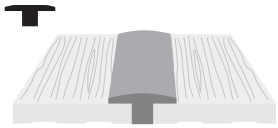
E. Move refrigerators with a soft wheel dolly or glides to avoid denting floor. Do not install stiff copper tubing from water source to ice maker. Use flexible braid tubing instead. A braided hose is much more durable and less prone to leak.
*For flooring touch up and scratch repair, refer to Teragren website @ www.teragren.com.*

## Coordinating Accessories

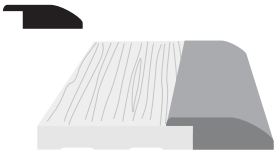
**Stair Nosing**



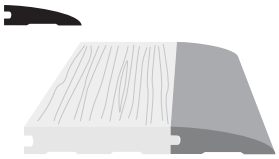
**T-mold**



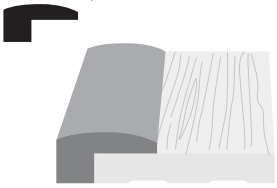
**Floating Floor Reducer**



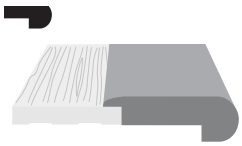
**Clamshell Reducer**



**Baby Threshhold**



**Stair Nosing - Floating Floors**




Teragren Inc.
Installation Instructions Pre-finished Engineered Bamboo
2017.v1