

# Cali Bamboo® Flooring Installation Guidelines

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## Cali Bamboo Flooring Installation Guides

### General Information

The following information provided by Cali Bamboo is intended to serve as a reference guide only. Please carefully read Cali Bamboo's installation, maintenance and warranty documentation prior to installation. Follow the National Wood Flooring Association (NWFA) Installation Guidelines when installing your floor.

Cali Bamboo offers in house technical support as a courtesy to our customers. Consult with one of our bamboo flooring experts to find answers to your specific installation questions unique to your application. Contact us by email: [customerservice@calibamboo.com](mailto:customerservice@calibamboo.com) ; or by phone: 888.788.2254 ext. 2.



### Important Notes

Determine the best installation method that suits your application. Cali Bamboo® floors may be Floated (not secured to the subfloor), Glued, or Nailed. For floating applications, Cali Bamboo highly recommends selecting a style from our Fossilized™ Click Lock Bamboo Flooring series. Follow the instructions designated for the most suitable installation method for your project.

Upon ordering of wood floor material consider adding an additional 8% to allow for cutting waste (5%) and grading allowance (3%).

Cali Bamboo® flooring is manufactured in accordance with accepted industry standards, which permit manufacturing, grading and natural deficiencies not to exceed 5%. If more than 5% of the material is unusable, do not install the flooring. Immediately contact the distributor/retailer from which the flooring was purchased. No claim will be accepted for materials with visible defects once they are installed. Installation of any material serves as acceptance of the material delivered.

Installer/Owner assumes all responsibility to inspect all flooring before installation. Boards deemed unacceptable in appearance can be placed in closets, near walls or simply not be used. Pieces with glaring defects that can be seen from a standing position should be cut off or not be used as use constitutes acceptance. The use of putty, stains, filler sticks or markers to touch-up flooring during installation is considered normal practice.

As bamboo is a natural product, natural variations in color may occur within and between individual flooring planks. To visualize the range of colors within the flooring style you are considering, compare your samples to the photos on our web site. During installation, work from several cartons at a time to achieve a uniform appearance across the entire floor. Mix and mingle planks when dry-laying the floor for maximum aesthetic appearance. Blend moldings to planks that have similar color. Natural variations in color are not covered under warranty.

It is the responsibility of the installer/homeowner to determine if the job site conditions, environmental conditions and sub-floor are acceptable for the installation of Cali Bamboo® flooring. Prior to installation, the installer/owner must determine that the jobsite meets or exceeds all applicable National Wood Flooring Association's Installation Guidelines. Cali Bamboo does NOT warrant against failure resulting from or connected with subfloor, job site damage, or environmental deficiencies after installation.

Cali Bamboo makes no warranty or guarantee of the quality of the chosen installer's work or of a particular installation performed by him or her. Cali Bamboo disclaims all liability for any errors or improprieties in the installation of its products by an installer. Please contact the National Wood Flooring Association (800-422-4556) to find a certified installer in your area, or for more information on the installation of hardwood flooring.

Controlling flooring moisture content is important for success. Bamboo, like all hardwood flooring species, is hygroscopic; its size and shape changes naturally with the absorption or release of moisture. The amount of movement varies depending on the preventative steps taken at the time of installation (i.e. acclimation, moisture barrier application, etc.) and the stability of the home environment thereafter. Care should be taken to control fluctuating levels of moisture within the building, and to maintain humidity levels within the recommended 40-60% relative humidity range.

Floor noise is normal and will vary from one installation type to the next. Occasional noise is due to structural movement and may relate to sub-floor type, flatness, deflection, and/or related to the fasteners, changes in environmental conditions, relative humidity and the amount of topside pressure applied to the flooring. For these reasons floor noise is not considered a product or manufacturer defect.

Cali Bamboo® flooring is intended for installation on or above grade only. Flooring installed below grade is not covered under warranty.

## Prior to Installation of Cali Bamboo® Flooring

### Job Site Preparation:

Prior to installation, it is the installer's responsibility to determine that the jobsite, environment and subfloor conditions all meet the requirements of the National Wood Flooring Association. Do not deliver flooring to jobsite until the building has been enclosed with windows and doors, all cement, plastering, and other "wet" work has been completed, and a consistent room temperature has been reached. Confirm proper drainage exists around the structure. Lack of moisture protection can allow excessive water or moisture to penetrate basement walls, flow beneath concrete slabs, basement floors, and into crawl spaces. In crawl spaces, exposed earth must be fully covered with minimum 6-mil polyethylene sheeting. Crawl space vents must be open. A moisture retardant such as 6 mil polyethylene film must be placed in crawl spaces. Heating units or non-insulated ductwork close to the flooring or subfloor may cause "hot spots" which must be eliminated prior to installation.

During installation, it is the installer's responsibility to document all jobsite conditions and measurements including the installation date, flooring moisture content, site relative humidity, temperature, and subfloor moisture content. This information must be retained by the installer and left with the property owner as a permanent record. For a complete list of points to address prior to installation, refer to the NWFA's [Jobsite Checklist](#).

### Subfloor Requirements:

General: Subfloor must be structurally sound and meet all NWFA guidelines. All subfloors must be flat to a tolerance of 3/16" in a 10' radius. Use appropriate leveling products for correcting subfloor deficiencies. Subfloor surfaces must be smooth, clean, dry and free of contaminants that would interfere with an adhesive bond. All subfloors should be tested for moisture content (see "Subfloor Moisture Testing"). If high moisture readings are found, identify the moisture source and correct the problem before installation. Do not install flooring directly over floor joist without proper subflooring.

**Wood Subfloors:** Subfloor must meet all above requirements. CD Exposure 1 plywood and OSB Exposure 1 subfloor panels are appropriate subfloor materials (grade stamped US PS1-95). Solid board subfloors should be 1" x 6" nominal, Group 1 dense softwoods, #2 Common, KD. Minimum single layer subfloor thickness is 5/8" on 16" o.c. joists or 3/4" on 19.2" o.c. joists. Subfloor must be securely nailed or screwed to joists to minimize movement. Squeaky or loose boards should be reinforced by nailing/screwing every 12" on center along joists. High spots may be sanded down. Low spots should be cut out and repaired. Subfloor must be square with the space and run perpendicular to the joists, or additional subfloor thickness is required. A subfloor of 1-1/8" plywood over joists at 16" on center is recommended for optimal installation. Test subfloor moisture content. Flooring moisture content should be within 3% of subfloor moisture content. In no case should any wood moisture reading exceed 12%.

**Concrete Subfloors:** Subfloor must meet all above requirements. Concrete must be fully cured and at least 60 days old. Concrete must be free of dirt, oil, paint, old adhesive, wax, sealers and curing agents. Concrete that is not properly leveled can cause improper adhesive transfer, hollow spots, and squeaks. Sand or grind down high spots. Level low spots with appropriate leveling material; allow extra drying time for the leveling compounds. Test subfloor moisture content. To minimize moisture transfer from the slab, apply a moisture barrier such as: Titebond 531+ Moisture Control System.

**Moisture Testing Subfloor:**

**General:** Test the subfloor for moisture content before installation. If high moisture readings are found, identify the moisture source and correct the problem. Extend acclimation time and increase ventilation until the proper conditions have been met. Apply a moisture barrier. Please note that test results are only applicable the day of testing and will not ensure that moisture will not fluctuate with seasonal changes. Regardless of subfloor moisture content, the use of a moisture barrier is strongly recommended for all installations. Cali Bamboo does not warrant against moisture related problems.

**Wood Subfloors:** Use moisture meter to test wood subfloor moisture content. If results show moisture vapor at or exceeding 9%, determine its source and correct problem. Do not install the floor without a vapor barrier.

**Concrete Subfloors:** Concrete subfloors must be tested for moisture vapor pressure in more than one place for consistent readings. If test results show moisture vapor exceeds the minimum requirements below, do not install the floor without an impermeable vapor retarder with a perm rating of less than .13 perm designed to permanently block this moisture.

- In-Situ Probe Method (ASTM F 2170): The Relative Humidity levels should not exceed 75%.
- Tramex Concrete Moisture Encounter: Moisture readings should not exceed 4.5% on the upper scale.
- Calcium Chloride Test (ASTM F 1869): The maximum vapor emissions cannot exceed 3lbs/1000SF in 24 hours.

**Moisture Testing Bamboo Floor:**

Use a reliable moisture meter that is acceptable for bamboo flooring. Strand-woven bamboo moisture readings must be converted to achieve accurate results. Contact the meter manufacture to verify substitute settings for bamboo. Meters that have adjustable species settings and conversion tables for strand-woven bamboo (such as Delmhorst; see table; right\*) are most accurate. The flooring moisture content should vary less than 3% from the subfloor moisture content prior to installation.

**Delmhorst Moisture Meter Conversion Table for Strand-Woven Bamboo Flooring**

| Meter Reading (Doug. 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                        |
| 27                                | 14.5                      |
| 28                                | 15.5                      |

### Moisture Barrier Requirements:

General: Unexpected changes to subfloor moisture content may cause dimensional changes to the floor. To ensure a lifetime of satisfaction, it is strongly recommended that Cali Bamboo® flooring be installed over a moisture barrier or vapor retarder (following adhesive manufactures guidelines) per the following specifications:

Wood Subfloors: For best results, use a moisture barrier with a perm rating between 0.7 and 50 when tested in accordance with ASTM E-96 Method A. Install as recommended by the manufacturer. Examples of acceptable moisture barriers for wood subfloors include: Asphalt laminated paper (UU-B-790a, Grade B, Type I, Style 1a.) and: Asphalt-saturated kraft paper or #15 or #30 felt (D-4869 or UU-B-790, Grade D.)

Concrete Subfloors: For on-grade and below grade applications, adding a vapor retarder is always recommended. Install an impermeable moisture barrier/vapor retarder systems with a perm rating less than or equal to 0.13. For glue-down or floating installations, Cali Bamboo highly recommends using: Titebond® 531+ Moisture Control System. Install as recommended by the manufacturer.

## Acclimation & Conditioning of Flooring

The goal of acclimation is to allow the moisture content (MC) of the flooring to fully adjust to its new surroundings before installation.

**1. Determine Normal Living Conditions** - Ideal interior environmental conditions vary from region to region and jobsite to jobsite. It is the installer's responsibility to know what the "ideal" climate conditions are and customize the acclimation of the floor around those conditions. For a general view of moisture-content averages by region, see the map below.



**2. Control Home Conditions Accordingly** - Acclimation should occur at normal living conditions. Before opening the cartons, the indoor environment should reflect the room temperature and relative humidity levels expected to be present before, during, and most importantly, after installation. Operate temperature / humidity control systems as normal. Allow normal ventilation through rooms.

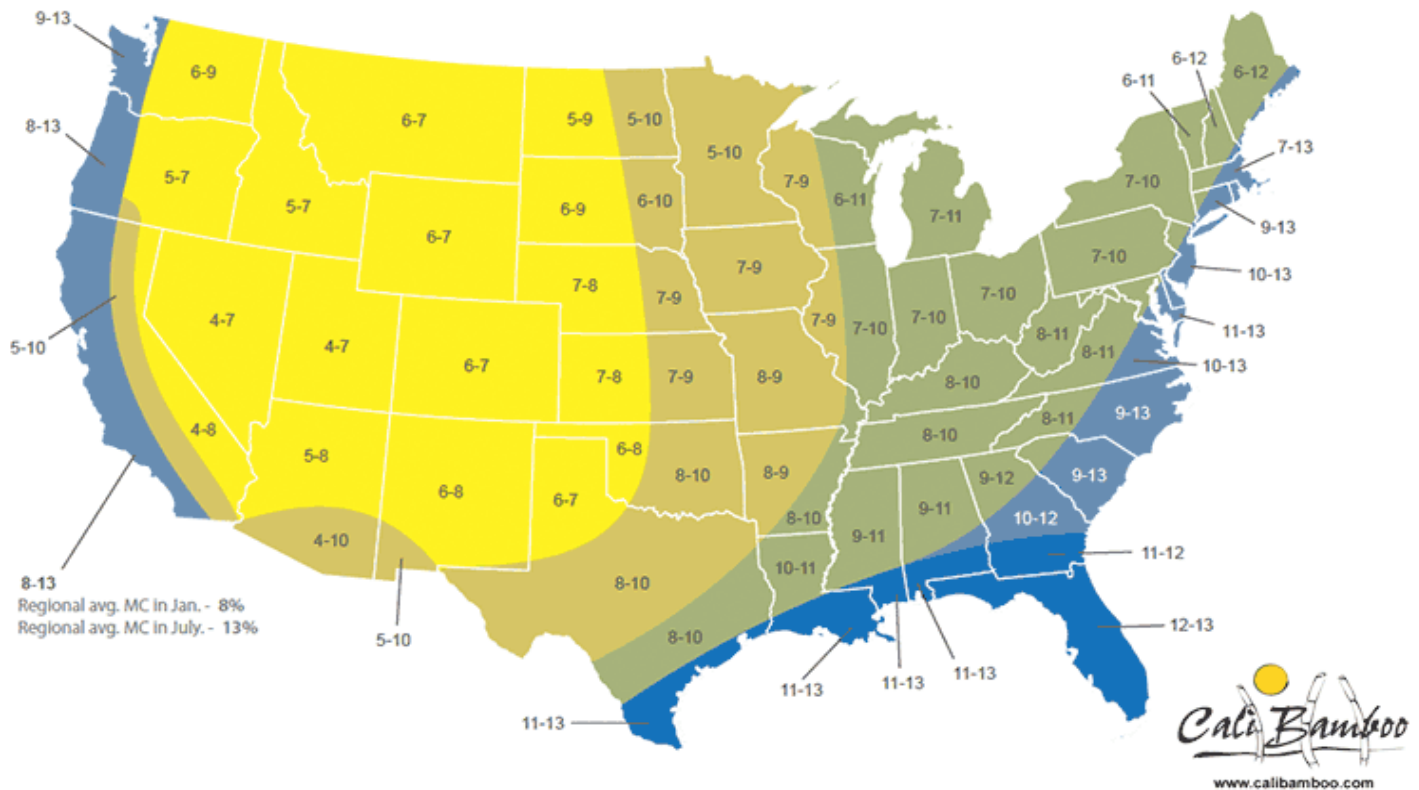
**3. Sticker Stack Flooring Planks** - For maximum stability, Cali Bamboo recommends sticker stacking the flooring at the installation site while it acclimates. Remove the flooring from boxes and cross stack planks at least 4" off the subfloor with even spacing between planks to allow for complete and even air-circulation around the flooring.

**4. Acceptable Areas for Acclimation** - Acclimate the flooring as close to the center of the installation area as possible. Do not store flooring next to outside walls, in direct sunlight, near air vents or under conditions that don't reflect the normal home environment. Garages, and exterior patios, are not acceptable areas to store wood flooring during acclimation.

**5. Determine Appropriate Acclimation Time Frame** - Cali Bamboo® flooring should be allowed to acclimate on the job site for a minimum of 72 hours. Extended conditioning may be necessary depending on the climate. For regions or conditions that are extremely dry, humid or highly-fluctuating, 2 or more weeks may be necessary for acclimation.

**Optimum Flooring Moisture Content (%) by U.S. Region:**

This map is provided by the NWFA and relates to all hardwood flooring species. For each region, the average equilibrium moisture content (EMC) for hardwood is identified for both January and July. The EMC is the MC (%) that the floor will reach once it has fully acclimated to its environment. This is also the optimum MC for installation, and will provide a general idea of what acclimation measures to take. In each pair of figures, the first number is the average EMC during January; the second is the average EMC during July.



NOTE: Actual moisture content conditions in any location may differ significantly from these numbers. This map cannot be reliably used as a basis for installation. The most reliable moisture-content numbers can be obtained at the job site. Take moisture content readings of the flooring, subfloor and relative humidity to be sure.

To better understand the specific acclimation requirements for your home, refer to the chart below for correlations between relative humidity (RH), temperature, and flooring moisture content (%). Referencing the weather conditions in your area, find the combination of temperature and RH on the chart. This value represents the flooring moisture content to achieve during acclimation for best results.

Values within chart's shaded area represent environments with relative humidity (RH) and temperature capable of maintaining the delivered moisture content of 6-9%. These are optimum conditions for maximum flooring stability. For environments outside of this range, allow more time for acclimation. Depending on your local in-home conditions, the use of humidification/dehumidification equipment may be recommended to maintain proper in-home environment.

| Temperature (°Fahrenheit) | 5   | 10  | 15  | 20  | 25  | 30  | 35  | 40  | 45  | 50  | 55   | 60   | 65   | 70   | 75   | 80   | 85   | 90   | 95   | 98   |
|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|
| 30                        | 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 | 26.9 |
| 40                        | 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 | 26.9 |
| 50                        | 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 | 26.9 |
| 60                        | 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 | 26.8 |
| 70                        | 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 | 26.6 |
| 80                        | 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 | 26.3 |
| 90                        | 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 | 26.0 |
| 100                       | 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 | 25.6 |

Chart taken from *Wood Handbook: Wood as an Engineering Material*, (Agriculture Handbook 72), Forest Products Laboratory, U.S. Department of Agriculture.

**Here is an example of how to use the chart above:**

My home is normally and currently maintained at an average temperature of: **70° F**

My home is normally and currently maintained at an average relative humidity of: **40% RH**

The combination of 70°F and 40%RH on the chart shows that the floor should be acclimated moisture content of: **7.7%**

The value of **7.7%** MC falls within the **shaded area** on the chart.

Continue to acclimate the flooring until the flooring moisture content varies less than 3% from the subfloor (e.g. if subfloor has a moisture content of 6%, the maximum moisture content of the flooring should be 9%). Testing of the flooring, subfloor and relative humidity of the job site can determine this (see Subfloor & Flooring Moisture Testing) sections.

**Note:** Not properly acclimating wood flooring may cause excessive expansion, shrinkage, dimensional distortion or structural damage. The worst-case scenario is one in which wood flooring is stored outside of the area in which the wood is to be installed. Acclimation is the responsibility of the installer/homeowner. A video tutorial is also available here: [How to Acclimate Hardwood Flooring](#).

**Radiant Heat Systems:**

Cali Bamboo® flooring is only recommended for use over radiant heat systems if the special requirements specified by the National Wood Flooring Association are met (please refer to the NWFA's Radiant Heat Guidelines). Ensuring stable job site conditions, subfloor suitability and proper acclimation are especially important when installing over a radiant heat system. It is the responsibility of the installer to ensure that the recommended environmental conditions are met for installation. Refer to your radiant heat system manufacturer to determine its compatibility with bamboo flooring, and to learn the specific requirements for installation.

- The floating installation method is the most suitable for use with radiant heat systems
- Relative Humidity must be maintained between 40-60%
- Subfloor moisture should never vary greater or less than 3% from the flooring moisture content
- 5/8" Plywood or 3/4" oriented strand (OSB) boards are recommended for subfloor materials
- Radiant heat system must be turned on and in operation for at least 6 days before installation.
- The system must be turned down to 65°F and maintained 24 hours prior to installation.
- Once install is complete, turn system back on and slowly bring back up to normal operating temperature over a period 4-5 days.
- Floor should never be heated over 80°F. Consult with your radiant heating system manufacturer to successfully limit the maximum temperature.

## Installation of Cali Bamboo® Flooring

### General Guidelines - All Installations

- Follow the Bamboo Flooring Care & Maintenance Guidelines to keep your floor looking its best after installation.
- Save a box of flooring for use in future repairs.
- Do not install flooring under permanent or fixed cabinetry.
- Floor should be installed from several cartons at the same time to ensure good color, shade and appearance.
- Most installation failures result from jobsite moisture. Do not deliver flooring to the jobsite until problems are corrected.
- Cali Bamboo® flooring is intended for installation on or above grade only. Flooring installed below grade is not covered under warranty.
- The flooring moisture content should vary less than 3% from the subfloor moisture content prior to installation.
- Since bamboo expands with any increase in moisture content, we recommend leaving at least 1/2" expansion space between flooring and all walls and vertical objects, such as walls, cabinets, pipes, etc. If the installation flows into other rooms and continuous runs in excess of 30 feet, a greater expansion is required, approximately 1/16" for every ten (10) feet. NEVER install any floating floors against any vertical fixed object such as fireplace, columns, floor outlets, etc. Failure to follow this guideline may result in tenting or buckled floors.
- 3M blue painter tape #2080 can be used to keep rows or sections of floor boards together until the adhesive has cured. (Incorrect or aggressive tape can harm the finish, do not leave on overnight.)
- During installation, it is the installer's responsibility to document all jobsite conditions and measurements including the installation date, flooring moisture content, site relative humidity, temperature, and subfloor moisture content. This information must be retained by the installer and left with the property owner as a permanent record.
- Depending on the application, Cali Bamboo flooring can be installed over an approved underlayment to provide greater thermal insulation and sound isolation qualities. Cali Bamboo recommends using our premium cork underlayment, AcoustiCORK, which offers several benefits that include step noise reduction, increased walking comfort, and long-lasting durability. Cork will not work as a substitute for a moisture barrier.
- Cali Bamboo carries matching bamboo flooring accessories and stair parts including stair treads, stair risers, stair nosings, reducers, t-moldings, quarter rounds, thresholds, vent registers and baseboards as well as all the glues and adhesives you will need for to complete your project. Please visit Cali Bamboo's Flooring Accessories webpage for more information.



### Floating Click Lock Glueless Installation Guide

**Cali Bamboo Click-Lock flooring system simplifies installation.** Perfect for DIY enthusiasts – it's the fastest and easiest to install, designed to snap together, allowing for floating installation without the need of nails or glue. Before you start, ensure that the job site, subfloor and environmental conditions are acceptable for installation of Cali Bamboo® flooring. All requirements specified in Cali Bamboo's Installation Guidelines must be met:





- |                         |                                        |
|-------------------------|----------------------------------------|
| ✓ Important Notes       | ✓ Moisture Testing                     |
| ✓ Jobsite Preparation   | ✓ Moisture Barrier Requirements        |
| ✓ Subfloor Requirements | ✓ Acclimation & Conditions of Flooring |

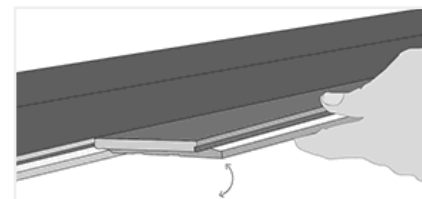
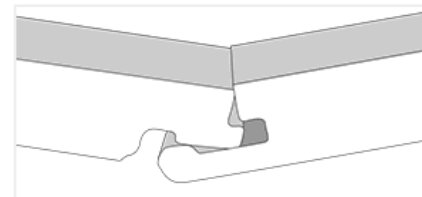
For best results, use a moisture barrier that is suitable for the subfloor type (see “Moisture Barrier Requirements” section for examples of acceptable moisture barrier systems). Leave at least 1/2” expansion space between flooring and all walls and vertical objects to allow for natural fluctuations. If the installation flows into other rooms and continuous runs in excess of 30 feet, a greater expansion is required; approximately 1/16” for every ten (10) feet.

**Recommended Floating Floor Tools:**

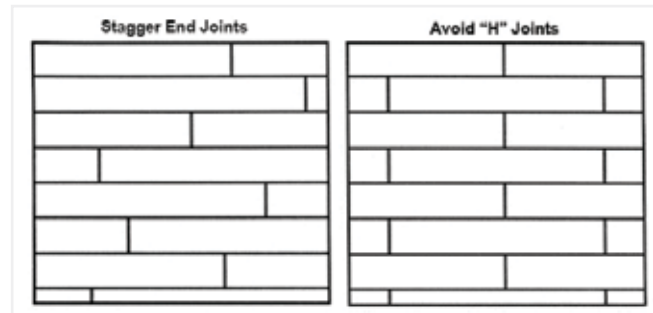
- |                                                  |                             |
|--------------------------------------------------|-----------------------------|
| Underlayment (see Moisture Barrier Requirements) | Hammer                      |
| Tapping block (trimmed piece of flooring)        | Tape measure                |
| Wood or plastic spacers (1/2”)                   | Pencil                      |
| Flat bar or pull bar                             | Chalk line                  |
| Miter saw (chop-saw)                             | Earplugs and safety glasses |
| Undercut or jamb saw                             |                             |

**Installation Steps:**

1. Cali Bamboo recommends sealing concrete subfloor with Titebond® 531+ Moisture Control system prior to installation.
2. Allow a 1/2” space for expansion around the perimeter of the room and all vertical objects using spacers.
3. It is recommended to install the planks parallel to the longest wall.
4. Click a few rows together before full installation to confirm your layout plan.
5. Begin by laying the first plank in a corner with the long grooved side toward the long wall.
6. Connect short side of second plank together with mating side of the first plank.
7. Cut the last plank and complete the row. Use the remaining plank to start the second row.
8. Make sure to offset the end joints of consecutive rows by a minimum of 6 inches for best appearance.
9. Begin the second row by clicking the long edge of the planks together. Begin at an angle and press the plank downward to fully engage the click lock system.
10. Repeat this process for the second plank with the short end of the plank covering the mating end of the previous plank. Use a hammer and tapping block to ensure proper engagement.



11. Repeat this process for remaining rows keeping 6 inches between joints and maintaining a 1/2" expansion gap around fixed objects.
12. The last row may require rip cutting the planks to size, be sure to cut enough to maintain proper expansion gap.
13. As with the other rows, complete the last row by connecting the long edges.



**After Installation:**

The newly installed floor is complete and can be walked on immediately.

**Floating T&G Floor Installation Guide**

**This method offers a fast, convenient, and cost efficient way to install a bamboo floor.** The floating method is also known to produce a stable floor due to the fact that it is not secured to the subfloor. Floating floors are ideal for applications that have multiple floor coverings that may be too troublesome to remove. Before you start, ensure that the job site, subfloor and environmental conditions are acceptable for installation of Cali Bamboo® flooring. All **requirements specified in Cali Bamboo's Installation Guidelines** must be met:



|                       |                                      |
|-----------------------|--------------------------------------|
| Important Notes       | Moisture Testing                     |
| Jobsite Preparation   | Moisture Barrier Requirements        |
| Subfloor Requirements | Acclimation & Conditions of Flooring |

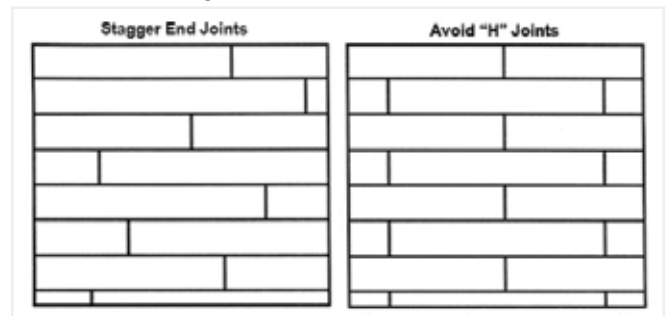
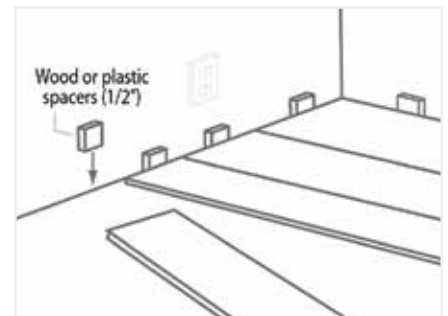
Cali Bamboo highly recommends using Titebond® Tongue & Groove Flooring Glue for floating applications. For best results, use a moisture barrier that is suitable for the subfloor type (see Moisture Barrier Requirements section for examples of acceptable moisture barrier systems). Leave at least 1/2" expansion space between flooring and all walls and vertical objects to allow for natural fluctuations. If the installation flows into other rooms and continuous runs in excess of 30 feet, a greater expansion is required; approximately 1/16" for every ten (10) feet.

**Recommended Floating Floor Tools:**

- |                                                  |                             |
|--------------------------------------------------|-----------------------------|
| Titebond® Tongue & Groove Flooring Glue          | Undercut or jamb saw        |
| Underlayment (see Moisture Barrier Requirements) | Hammer                      |
| Tapping block (trimmed piece of flooring)        | Tape measure                |
| Wood or plastic spacers (1/2")                   | Pencil                      |
| Flat bar or pull bar                             | Chalk line                  |
| Miter saw (chop-saw)                             | Earplugs and safety glasses |

## Installation Steps:

1. Cali Bamboo recommends sealing concrete subfloor with Titebond® 531+ Moisture Control system prior to installation.
2. Allow a 1/2" space for expansion around the perimeter of the room and all vertical objects using spacers.
3. It is recommended to install the planks parallel to the longest wall.
4. Dry lay (do not glue) a few rows before installation to confirm your layout plan.
5. Begin by laying the first plank in a corner with the long grooved side toward the long wall.
6. Apply a small continuous consistent bead of Titebond™ T&G flooring glue along the bottom side of the flooring groove.
7. Connect short side of second plank together with mating side of the first plank.
8. Cut the last plank and complete the row. Use the remaining plank to start the second row.
9. Make sure to offset the end joints of consecutive rows by a minimum of 6 inches for best appearance.
10. Continue second row by connecting short edges of planks first with long edges.
11. The last row may require rip cutting the planks to size, be sure to cut enough to maintain proper expansion space.
12. As with the other rows, complete the last row by connecting the short edges first and using a pull bar to tap the long edges together.



### After Installation:

Allow the newly installed floor to fully cure based on adhesive recommendations before walking or moving furniture onto the floor.

Use Bostik's™ Ultimate Adhesive Remover Towels to immediately remove any adhesive on flooring surface as you go.

## Nail Down Floor Installation Guide

### The nail-down method is suitable for wood subfloors.

When nailing, the flooring should be always laid perpendicular to the floor joist. For best results, use a moisture barrier designed for wood subfloors (see "Moisture Barrier Requirements" section). Before you start, ensure that the job site, subfloor and environmental conditions are acceptable for installation of Cali Bamboo® flooring. All requirements specified in Cali Bamboo's Installation Guidelines must be met:



- ✓ Important Notes
- ✓ Jobsite Preparation
- ✓ Subfloor Requirements
- ✓ Moisture Testing
- ✓ Moisture Barrier Requirements
- ✓ Acclimation & Conditions of Flooring

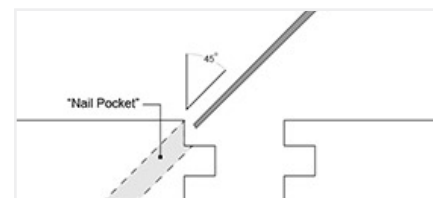
The selection and use of any nailer is at the discretion and responsibility of the installer/ homeowner. Choose a nailer model that is specifically designed for tongue and groove applications. We recommend a Pneumatic 18 Gauge Flooring Nailer (such as Powernail 50p Flex or similar). It is the installer's responsibility to determine the correct pressure for their stapler/nailer, and to ensure that the fastener is properly seated. Dimpling of the flooring face or edge is not a manufacturing defect.

### Recommended Floating Floor Tools:

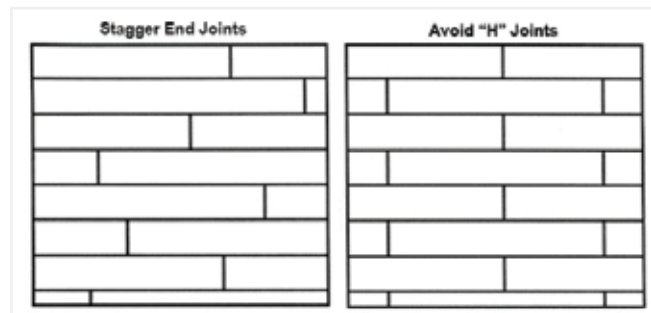
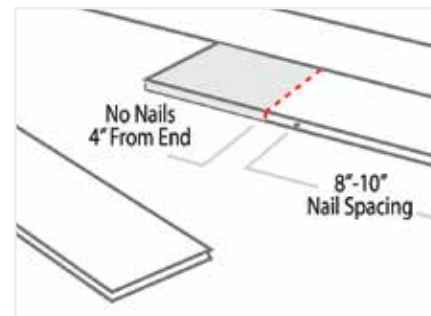
- |                                                                    |                             |
|--------------------------------------------------------------------|-----------------------------|
| Pneumatic 18-gauge tongue-and-groove flooring nailer               | Miter saw (chop-saw)        |
| Use 1-1/2" to 2" long, 18-20 gauge cleats for Fossilized™ flooring | Undercut or jamb saw        |
| Underlayment (see Moisture Barrier Requirements)                   | Hammer                      |
| Tapping block (trimmed piece of flooring)                          | Tape measure                |
| Wood or plastic spacers (1/2")                                     | Pencil                      |
| Flat bar or pull bar                                               | Chalk line                  |
|                                                                    | Earplugs and safety glasses |

### Installation Steps:

- When nailing, the flooring should be always laid perpendicular to the floor joist.
- Allow a 1/2" space for expansion around the perimeter of the room and all vertical objects using spacers.
- Dry lay (do not nail) a couple rows before starting installation to confirm your layout plan.
- Test the air pressure and angle of your pneumatic nailer with a sample plank to check for correct air pressure before installation. If you note any surface damage (face dimpling), tongue damage (splitting), etc., adjust the air pressure/angle accordingly. Test until dimpling no longer occurs.
- Begin installation next to an outside wall. This is the best reference for establishing a straight working line.
- With groove facing the wall, lay the first starter row in place by blind nailing or gluing to avoid unsightly nail marks. Cali Bamboo recommends Titebond™ GREENChoice™ Construction Adhesive.
- Connect short side of second plank together with the mating side of the first plank.
- Cut last plank and complete row. Use the remaining plank to start the second row.
- Be sure to offset the end joints of consecutive rows by a minimum of six (6) inches for best appearance.
- Continue the second starter row by connecting the short edges first and use a pull bar to tap the long edges together.



11. After the first two rows are secured, install the remaining rows by nailing directly above the tongue at a 45 degree angle.
12. Carefully monitor nailer pressure to ensure that the nail head enters the tongue only as deeply as required to allow the adjacent plank to fit properly. Ensure that the nail head rests cleanly in the “nail pocket”.
13. Recommended nail spacing is 8 to 10 inches along the length of each board.
14. Avoid nailing closer than 4 inches from the end of the plank.
15. As with the other rows, connect the short edges first and use a pull bar to tap the long edges together.
16. Regularly check your working lines to be sure the floor is still aligned.
17. The last row may require rip cutting the planks to size.
18. The last two rows will need to be secured in the same manner as the first two rows.



**After Installation:**

The newly installed floor is complete and can be walked on immediately.

Use wood filler, a finish touch-up kit or putty to correct minor flooring damage that occurs during installation.

**Glue Down Flooring Installation Guide**

**This installation method is commonly used when installing over concrete that is on or above grade.** Cali Bamboo does not recommend gluing below grade. Before you start, ensure that the job site, subfloor and environmental conditions are acceptable for installation of Cali Bamboo® flooring. All requirements specified in Cali Bamboo’s Installation Guidelines must be met:



- ✓ Important Notes
- ✓ Jobsite Preparation
- ✓ Subfloor Requirements
- ✓ Moisture Testing
- ✓ Moisture Barrier Requirements
- ✓ Acclimation & Conditions of Flooring

For best results, use a moisture barrier that is suitable for the subfloor type (see Moisture Barrier Requirements section for examples of acceptable moisture barrier systems).

**Recommended Adhesive/Moisture Control Products:**

The selection, use and suitability of any adhesive/moisture control system is at the discretion and responsibility of the installer. Always use a moisture barrier and adhesive system manufactured by the same company - never mix products. Cali Bamboo recommends using Titebond flooring adhesive and moisture barrier systems in accordance with manufactures specifications to receive Titebond’s Platinum installation warranty. Remember: Always Follow Flooring Adhesive Recommendations. Cali Bamboo does not warrant against adhesive related problems.

**Titebond® 821 Premium Floor Adhesive**

High-performance adhesive ideal for bamboo to common underlayment and subfloors.

- Installation Methods: glue-down
- Subfloor Types: concrete, plywood

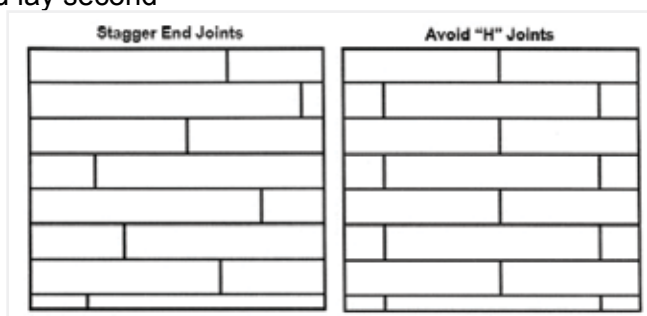
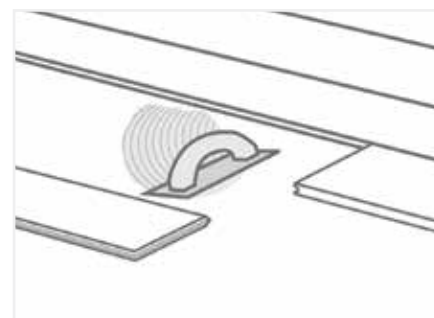
**Titebond® 531+ Moisture Control System**

Solves the challenges of moisture transfer from concrete to flooring. Fully-warranted.

- Installation Methods: glue-down, float
- Subfloor Types: concrete

**Installation Steps:**

1. Cali Bamboo recommends sealing concrete subfloor with Titebond® 531+ Moisture Control system prior to installation.
2. Allow a 1/2" space for expansion around the perimeter of the room and all vertical objects using spacers.
3. Dry lay (do not glue) a couple rows before starting installation to confirm your layout plan.
4. Begin installation parallel to the longest an outside wall. This is the best reference for establishing a straight working line.
5. Lay the first row of flooring with groove facing the wall. Starter rows should be secured by blind nailing and gluing..
6. Connect short side of second plank together with mating side of the first plank.
7. Cut last plank and complete row. Use the remaining plank to start second row.
8. Offset end joints of consecutive rows by a minimum of 6" for best appearance.
9. With the first row in place, trowel out some adhesive and lay second row by connecting short edges of planks first. Use a pull bar to tap long edges together.
10. Always check your working lines to be sure the floor is still aligned.
11. Use tapping block to fit planks together, but be careful not to let installed floor move on the wet adhesive while you are working.
12. The last row may require rip cutting the planks to size.
13. Flooring planks on perimeter of room may require weight on them until adhesive cures enough to hold them down.

**After Installation:**

Allow the newly installed floor to fully cure based on adhesive recommendations before walking or moving furniture onto the floor.

Use Bostik's™ Ultimate Adhesive Remover Towels to immediately remove any adhesive on flooring surface as you go.

## Cali Bamboo Floor Care & Maintenance

- Cali Bamboo recommends you vacuum or sweep the floor on a regular basis or as needed to remove dirt, sand or grit.
- Soak up spills immediately using a dry towel or dry mop.
- For general cleaning, use Bona Pro Hardwood Floor Cleaner & Bona Pro Hardwood Floor Mop.
- Fit furniture legs with felt tips or protective caps. Fix rolling furniture with soft rubber casters. Pick up heavy furniture or appliances; do not slide.
- Keep pets nails trimmed to avoid excess scratching.
- Limit direct sunlight on floor by using curtains and blinds in areas that are exposed to high UV rays.
- Maintain relative humidity between 40%-60%.
- Never wet-mop a hardwood floor. Standing water may cause permanent damage.
- Never use any of the following products on your floor: ammonia-based cleaners, acrylic finishes, wax-based products, detergents, bleach, polishes, oil soap, abrasive cleaning soaps, or acidic materials such as vinegar. Never apply wax treatments to your floor.
- Use interior and exterior doormats at entrances to prevent dirt and moisture from being tracked onto the floor. Area rugs are also recommended in front of kitchen sinks and in high traffic areas. Do not use rugs with solid rubber or vinyl backings. Rugs must be made of a breathable material to prevent moisture entrapment. We recommend using a breathable rug underlay. Mesh or grid patterns are best.



### What is the best way to mop my Cali Bamboo floor?

Never wet (or damp) mop your floor. Standing water can damage the floor. You may periodically use a very slightly dampened (near dry) mop to spot-clean; however excessive moisture will dull the finish. For wood flooring in the kitchen, place an area rug in front of the kitchen sink. We recommend using Bona Pro Hardwood Floor Cleaner & Bona Pro Hardwood Floor Mop to clean your floor.

### How can I protect the finish of my bamboo floor from wear over time?

Sweep and vacuum your floor regularly using a broom or dust mop. Brush or felt vacuum heads are recommended as opposed to vacuums with beater bars or hard heads. Use throw rugs both inside and outside doorways to prevent debris from being tracked onto floors. Keep pet's claws trimmed to avoid excess scratches. Avoid contact with excess moisture. Avoid walking on your floors with cleats, sports shoes and high heels. Do not slide heavy furniture or appliances across the floor.

### What are the best environmental conditions for my flooring?

As a general rule, with geographic exceptions, flooring will perform best when the interior environment is controlled to stay within a relative humidity range of 40%-60% and a temperature range of 60° to 80° Fahrenheit. (In some climates, the ideal humidity range might be higher or lower – 25 to 45 percent in desert areas for example.) It is the owner's responsibility to maintain appropriate conditions via the use of humidifier and/or de-humidifier. In homes in which occupants are there for a short period of time (weekend home or vacation cabin), or in rooms that are closed off (not heated or air conditioned) to save energy, ventilation is a must even when the home is not occupied.

### How do I fix a scratch on my finish?

If the scratch is white, the finish has not been compromised and is repairable. Simply using a flooring cleaner, like Bona, should eliminate these blemishes. If the scratch is deeper but the raw wood is not exposed, light buffing with a white polishing pad can shine up the dull area. Often the damage becomes less obvious. When removing stains from any wood floor, always begin at the outer edge of the stain and work toward the middle.



### My wood floor was damaged through the finish. Can it be repaired?

If you have a minor chip or slight damage, this may be minimized with a colored wax. Color Rite Caulk and Mohawk Fill Sticks are wood fill products that work great to reduce the appearance of deeper blemishes. For light scratches we recommend Tibet Almond Stick. If the damage is severe enough, board replacement is typically the best option. To match your floor repairs, we suggest that you take a sample of the flooring to your local hardware store. In most cases, more than one shade may be appropriate.

### Can I refinish my Cali Bamboo® Flooring?

Major modifications are not recommended and are never a guaranteed solution; all repairs are unique. Excessive sanding is not covered under warranty. Nevertheless, the method of refinishing Cali Bamboo® Flooring is the same as any hardwood flooring. An aluminum oxide coating is advisable. Please always seek assistance from an NWFA Certified Specialist, and always test on a sample plank before you proceed.

### What changes can I expect in my flooring from season to season?

Cali Bamboo floors, like all species of hardwood flooring, are subject to changes in temperature and humidity. Seasonal fluctuations in relative humidity may cause the wood flooring to gain moisture with periods of high humidity, and lose moisture during low periods of humidity. These changes may be noticeable. During warm, humid weather, wood expands. During dry weather, wood contracts. This seasonal movement is a normal characteristic of wood flooring, and can be minimized by using a HVAC system to maintain relative humidity between 40%-60%.