

NATURAL FLOORS INSTALLATION INSTRUCTIONS FOR TONGUE & GROOVE HARDWOOD AND BAMBOO FLOORING

Enclosed you will find installation instructions for the following products:

- Solid and Engineered Tongue & Groove (T&G) Hardwood & Traditional Bamboo
- Solid and Engineered Tongue & Groove (T&G) Strand Woven Bamboo

USE THE GRID BELOW TO DETERMINE WHICH INSTALLATION METHOD IS ACCEPTABLE FOR EACH TYPE OF PRODUCT

Type of Floor	Glue Down	Nail	Staple	Float	Over In-floor Radiant Heat	Special Instructions
Tongue & Groove Engineered Hardwood and Traditional Bamboo	Yes	Yes	Yes	Yes, if at least 5" wide	Yes	Oil finished floors require a coat of Woca Refresher immediately after installation to maintain warranty.
Tongue & Groove Engineered Strand Woven Bamboo	Yes	Yes	Yes	Yes, if at least 5" wide	Yes	
Tongue & Groove Solid Strand Woven Bamboo	Yes	Yes	No	No	Yes	For nail down installation, use only 18 gauge cleat nailer and cleat nails 1-1/4" to 1-1/2" with nailers tested by USFloors.
Tongue & Groove Solid Hardwood & Traditional Bamboo	Yes - Bamboo Only	Yes	Yes	No	Yes	Glue down installation is not recommended for solid hardwood floors.

ATTENTION! READ BEFORE INSTALLING!

COLOR VARIATION

This flooring is a natural product and color variations are to be expected. For best visual effect, shuffle planks from several cartons and do not install boards varying greatly in color next to one another.

ACCLIMATION

As relative humidity varies in different parts of the country, acclimation of the flooring prior to installation is the most important precaution to take in order to insure a successful installation. Proper acclimation is necessary to adapt the moisture content of the flooring to the conditions of your environment. Improper acclimation can cause the floor to buckle and/or the boards to shrink or cup after installation.

SUBFLOOR PREPARATION

Subfloor must be level, dry and free of imperfections. An uneven subfloor will make the floor feel unstable and cause premature damage.

READ THESE INSTRUCTIONS THOROUGHLY BEFORE BEGINNING INSTALLATION. IN ADDITION TO THESE INSTRUCTIONS, WE RECOMMEND THAT THE INSTALLER FOLLOWS ALL INSTALLATION GUIDELINES AS SET FORTH BY THE NATIONAL WOOD FLOORING ASSOCIATION.

FLOORING MATERIAL SHOULD BE INSPECTED PRIOR TO INSTALLATION

Responsibility for the suitability of NATURAL FLOORS flooring and accompanying products for each individual installation cannot be assumed by NATURAL FLOORS, since NATURAL FLOORS has no control over the installer's proper application. Should an individual plank be doubtful as to appearance or dimension the installer should not use this piece. NATURAL FLOORS will send replacement in a timely fashion.

PRE-INSTALLATION JOBSITE REQUIREMENTS

NATURAL FLOORS cannot be held responsible for site conditions. Carefully examine the flooring prior to installation for grade, color, finish and quality. Ensure adequate lighting for proper inspection.

If flooring is not acceptable, contact your supplier immediately and arrange for replacement.

NATURAL FLOORS cannot accept responsibility for flooring installed with visible defects. Prior to installation of any flooring, the installer must ensure that the jobsite and subfloor meet the requirements of these instructions. NATURAL FLOORS is not responsible for flooring failure resulting from unsatisfactory jobsite and/or subfloor conditions. Flooring should be one of the last items installed in any new construction or remodel project. All work involving water or moisture should be completed before flooring installation. Water and wood do not mix. Installing flooring onto a wet subfloor will most likely cause cupping, tip & edge raising, telegraphing of core and subsequent gapping.

Room temperature and humidity of installation area should be consistent with normal, year-round living conditions for at least one week before installation of flooring. Optimum room temperature of 70° F and a humidity range of 30-50% is recommended during installation. Humidity levels below 30% will most likely cause movement in the flooring, including gapping between pieces and possible cupping and checking in the face.

Store the flooring in the installation area for 72 hours before installation to allow flooring to adjust to room temperature. Do not store the boxes of flooring directly on concrete. These floors need adequate acclimation for moisture equalization prior to installation and should not be installed from just-opened boxes. Shuffle the boards for best visual mix of lengths and color.

PRE-INSTALLATION SUBFLOOR REQUIREMENTS

All Subfloors must be:

- Dry and will remain dry: Subfloor must remain dry year-round. Moisture content of wood sub floors must not exceed 11%. Concrete must be tested for moisture content using the Andydrous Calcium Chloride test method, a non-invasive moisture meter, or a pin/probe moisture meter.
- Structurally sound
- Clean: Thoroughly swept and free of all debris (If being glued down, subfloor must be free of wax, grease, paint,

sealers, & old adhesives etc., which can be removed by sanding)

- Level: Flat to 3/16" per 10-foot radius

Wood subfloors must be dry and well secured. Nail or screw every 6" along joists to avoid squeaking. If not level, sand down high spots and fill low spots with a Portland Based leveling patch.

Concrete subfloors must be fully cured, at least 60 days old, and should have minimum 6-mil polyfilm between concrete and ground. Subfloor should be flat and level within 3/16" per 10' radius. If necessary grind high spots down and level low spots with a Portland leveling compound.

All concrete should be tested for moisture prior to installation using the Andrydrous Calcium Chloride test method, a non-invasive moisture meter, or a pin/probe meter. When using a Calcium Chloride Test, the result must not exceed 3 lbs per 1000 sq. ft. in a 24 hour period.

A moisture test must be performed to ensure that the concrete slab is dry. Remember, a concrete slab on/below grade that measures dry today may become moist in the future due to rising groundwater. Installing a moisture barrier now may be viewed as an insurance policy against concrete becoming wet in the future. NATURAL FLOORS is not responsible for site related moisture issues.

For additional protection, you may want to consider applying moisture barrier compound system.

INSTALLATION TOOLS

For all installation methods:

- Tape measure
- Tapping block (trimmed piece of flooring)
- Pencil
- Pry bar or pull bar
- Chalk line
- Wood or plastic spacers (3/8")
- Crosscut power saw
- 3M Blue Tape (DO NOT ADHERE TO OIL FINISHED FLOORS)

For glue-down installation method, you'll also need:

- Recommended flooring adhesive
- Trowel per flooring adhesive manufacturer's recommendations.

For nail-down installation of solid and engineered hardwood and bamboo, and engineered strand woven bamboo, you will also need:

- Air stapler/nailer compatible with profile of the flooring material
- 1 1/2" – 2" nail, cleat, or staple that is compatible with the profile of the flooring material
- Air compressor

For nail-down installation of solid strand woven bamboo, you will also need:

- 18 gauge air cleat nailer compatible with profile of the flooring material
- 1 1/4" – 1 1/2" cleat nails
- Air compressor

Acceptable subfloor types:

- CDX Underlayment Grade Plywood (at least 1/2" thick)
- Underlayment grade particleboard (floating/glue-down only)
- OSB (at least 3/4" thick)
- Concrete slab (floating/glue-down only)
- Existing wood floor
- Ceramic tile (floating/glue-down only)
- Resilient tile & sheet vinyl (floating/glue-down only)

STARTING YOUR INSTALLATION

Make sure subfloor is tested for moisture first and is properly prepared.

Since natural flooring expands with any increase in moisture content, always leave at least a 3/8" expansion space between flooring and all walls and any other permanent vertical obstructions, (such as pipes and cabinets). This space will be covered up once you reapply base moldings around the room. Use wood or plastic spacers during installation to maintain this 3/8" expansion space.

Work from several open boxes of flooring and "dry lay" the floor before permanently laying the floor. This will allow you to select the varying grains & colors and to arrange them in a harmonious pattern. It also allows you the opportunity to select out very dark/light pieces for use in hidden areas in order to create a more uniform floor. Remember, it is

the installers' responsibility to determine the expectations of what the finished floor will look like with the end user first and then to cull out pieces that do not meet those expectations.

Begin installation next to an outside wall. This is usually the straightest and best reference for establishing a straight working line. Establish this line by measuring an equal distance from the wall at both ends and snapping a chalk line. The distance you measure from the wall should be the width of a plank plus about 3/8" for expansion space. You may need to scribe cut the first row of planks to match the wall in order to make a straight working line if the wall is out of straight.

You may want to dry lay a few rows, (no glue or nails), before starting installation to confirm your layout decision and working line. When laying flooring, stagger end joints from row to row by at least 8". When cutting the last plank in a row to fit, you can use the cut-off end to begin the next row. If cut-off end is 8" in length or less, discard it and instead cut a new plank at a random length and use it to start the next row. Always begin each row from the same side of the room.

To draw planks together, always use a tapping block (a short piece of flooring), as tapping the flooring itself will result in edge damage. For best results, flip the tapping block upside down and use the groove edge to tap the tongue edge of the plank being installed. Fit end joints tightly together before tapping long edges together. When near a wall, you can use a pry bar to pry close the side and end joints. Take care not to damage edge of flooring. For glue down & floating applications, use 3M® Blue Tape to hold any pieces which might have side bow and need to be held straight & tight until the adhesive sets up. DO NOT ADHERE TAPE OF ANY KIND TO OIL FINISHED FLOORS.

NAIL DOWN INSTALLATION FOR SOLID AND ENGINEERED HARDWOOD AND BAMBOO AND ENGINEERED STRAND WOVEN BAMBOO

REFER TO SEPARATE NAIL DOWN INSTALLATION INSTRUCTIONS FOR SOLID STRAND WOVEN BAMBOO.

Make sure subfloor is tested for moisture content first and is properly prepared. Use an air stapler/nailer compatible with profile of flooring material (or) a stapler/nailer of your choice. Test on a sample to make sure that stapling/nailing will not cause dimpling (localized raised edges) in the finished floor. **(Note: be sure to look at the face of the installed flooring at a low angle from a distance to see if dimpling is occurring as it is hard to see when directly above the floor.)** If dimpling does occur, STOP and adjust the stapler/nailer shoe and angle/place of staple entry in order to avoid it. NATURAL FLOORS is not responsible for dimpling.

For the first and second starting rows: lay first plank inside chalk line with grooved edge toward wall. Install entire first row in the same manner. Always leave at least a 3/8" expansion space between flooring and all walls and vertical objects (such as pipes and cabinets). Use wood or plastic spacers during installation to maintain this expansion space. In order to affix the first rows, as it is difficult to get the nail gun in place next to the wall, you may wish to set these rows in mastic and glue them down rather than face nailing them and leaving unsightly nail holes which must be filled with putty to match the wood floor.

After gluing down these starting rows with manufacturer's recommended adhesive, set weight on top of these rows and allow them to set before commencing stapling/nailing the additional rows, as nailing the adjacent rows may cause the starting rows to subsequently move. Make sure the starting rows are straight and drawn tight.

Subsequent rows: Lay by using floor nailer/stapler to blind-nail top inside edge of tongue at a 45 degree angle. Nail each board every 8" and within 2" of each end. Remember to stagger end joints from row to row at least 8" apart and use a tapping block to fit boards together. It may be necessary to face-nail in doorways or tight areas where the nailer/stapler can't fit, (or glue down in these areas and weight them while the mastic sets). The last two rows will need to be face-nailed, (or glued down), in the same manner as the first two rows.

Always make sure to visually check the installed floor as you go to ensure that the stapling/nailing is not causing dimpling on the face. **(Note: be sure to look at the face of the installed flooring at a low angle from a distance to see if dimpling is occurring as it is hard to see when directly above the floor.)** If dimpling does occur, STOP and adjust the stapler/nailer shoe and angle/place of staple entry in order to avoid it. NATURAL FLOORS is not responsible for dimpling.

NAIL DOWN INSTALLATION FOR SOLID STRAND WOVEN BAMBOO

Make sure subfloor is tested for moisture content first and is properly prepared.

IMPORTANT: Due to the extreme hardness of solid strand woven bamboo, particular care must be taken by the installer to ensure that the appropriate nailer, proper cleats nails, and the correct PSI settings are used to create a successful installation without damaging the floor. Natural Floors takes no responsibility for damage incurred to the floor as a result of improper installation. This includes damage to the surface or tongue of the plank.

Natural Floors recommends using ONLY 18 gauge cleat nailer and cleat nails 1-1/4" to 1-1/2" depending on whether the subfloor is plywood or OSB. *Failure to adhere to Natural Floors' recommended cleat nailer and cleat nail guidelines may void the warranty.* Choice of appropriate power nailer and selection of proper PSI settings are the sole responsibility of the home owner/installer.

Natural Floors has successfully tested the power nailers listed below. The PSI settings can range from 65-100 so it is important to test nail a plank or planks to determine the correct PSI required to install the floor without incurring damage. Check with the power nailer manufacturer for specific PSI recommendations for installing solid strand woven bamboo flooring.

Nailer	Adapter Shoe	Manufacturer URL
Porta-Nailer 402 Hammerhead Floor Nailer Kit	Yes	www.porta-nails.com
Powernail 50P and 50M	Yes	www.powernail.com
Bostitch MIII FN – Hardwood Flooring Cleat Nailer	Yes	www.bostitch.com
Senco SHF10 & SHF15 Manual Hardwood Flooring Cleat Nailer/SHF50 Pneumatic Hardwood Flooring Cleat Nailer	N/A	www.senco.com
Porter-Cable	N/A	www.deltaportercable.com

Make sure subfloor is tested for moisture content first and is properly prepared. Use an air nailer compatible with profile of flooring material (or) a nailer of your choice. Test on a sample to make sure that nailing will not cause dimpling (localized raised edges) in the finished floor or damage to the tongue. **(Note: be sure to look at the face of the installed flooring at a low angle from a distance to see if dimpling is occurring as it is hard to see when directly above the floor.)** If dimpling does occur, STOP and adjust the nailer shoe and angle/place of cleat entry in order to avoid it. **NATURAL FLOORS is not responsible for dimpling or damage to the tongue.**

For the first and second starting rows: lay first plank inside chalk line with grooved edge toward wall. Install entire first row in the same manner. Always leave at least a 3/8" expansion space between flooring and all walls and vertical objects (such as pipes and cabinets). Use wood or plastic spacers during installation to maintain this expansion space. In order to affix the first rows, as it is difficult to get the nail gun in place next to the wall, you will need to face nail them or glue them to the floor. If face nailing, you must fill nail holes with wood putty that matches the floor. You may wish to set these rows in mastic and glue them down rather than face nailing them and leaving unsightly nail holes which must be filled with putty to match the wood floor.

After gluing down these starting rows with manufacturer's recommended adhesive, set weight on top of these rows and allow them to set before commencing stapling/nailing the additional rows, as nailing the adjacent rows may cause the starting rows to subsequently move. Make sure the starting rows are straight and drawn tight.

Subsequent rows: Lay by using floor nailer/stapler to blind-nail top inside edge of tongue at a 45 degree angle. Nail each board every 8" and within 2" of each end. Remember to stagger end joints from row to row at least 8" apart and use a tapping block to fit boards together.

It may be necessary to face-nail in doorways or tight areas where the nailer can't fit, (or glue down in these areas and weight them while the mastic sets). The last two rows will need to be face-nailed, (or glued down), in the same manner as the first two rows.

Always make sure to visually check the installed floor as you go to ensure that the nailing is not causing dimpling on the face. **(Note: be sure to look at the face of the installed flooring at a low angle from a distance to see if dimpling is occurring as it is hard to see when directly above the floor.)** If dimpling does occur, STOP and adjust the stapler/nailer shoe and angle/place of staple entry in order to avoid it. **NATURAL FLOORS is not responsible for dimpling.**

GLUE DOWN INSTALLATION

Make sure subfloor is tested for moisture content first and is properly prepared.

On concrete subfloors, which are on or above grade (ground level), always assume the worst even if they measure dry. We recommend taking the following installation steps to ensure a trouble-free installation:

- Testing and documenting moisture content prior to installation
- Applying a sealer to the subfloor as needed.

Use flooring adhesive recommended by NATURAL FLOORS. Use of another manufacturer's adhesive may result in failure and void warranty. Follow adhesive manufacturer's instructions for proper trowel size, minimum temperature, adhesive set time and open time before beginning installation of flooring.

Once the spread adhesive has setup sufficiently per adhesive manufacturer's instructions, lay the first row of flooring with groove facing the wall, and continue laying flooring. Always check your working lines to be sure the floor is still aligned. Use tapping block to fit planks together, but be careful not to let installed floor move on the wet adhesive while you are working. Always leave at least a 3/8" expansion space between flooring and all walls and vertical objects (such as pipes and cabinets). Use wood or plastic spacers during installation to maintain this expansion space. Remember to stagger end joints from row to row at least 8" apart.

When first section is finished, continue to spread adhesive and lay flooring section by section until installation is complete. Use a damp cloth to **IMMEDIATELY REMOVE ANY ADHESIVE** that gets on the flooring surface. If adhesive cannot be completely removed with a damp cloth, use the manufacturer's recommended adhesive remover. Never let flooring adhesive dry completely on the finished surface.

Walk each section of flooring in order to make sure it is well bonded to the subfloor with the adhesive working time. Flooring planks on the perimeter of the room may require weight on them until adhesive cures enough to hold them down.

FLOATING INSTALLATION

Make sure subfloor is tested for moisture content first and is properly prepared.

Floating installation method should only be used on engineered floors measuring at least 5" in plank width.

When using Natural Cork CorkShield underlayment, no additional moisture barrier is necessary. If using an alternative 1/8" thick pad and installing below or on grade, polyfilm is required.

Laying polyfilm: Lay 6-mil polyfilm with seams overlapped 8". Fasten seams every 18-24" with duct tape. Run the outside edges of film up perimeter of each wall 4". Trim after flooring installation is complete.

Laying pad: Lay underlayment by butting edges, not overlapping. Tape full length of the seam with duct tape. Leave 1/2" space between pad and all walls and permanent vertical fixtures.

Installing the floor: start first row with groove toward wall. Glue end joints of first row by applying a small but continuous bead tongue and groove adhesive or PVAC glue to bottom side of the groove. Always leave at least a 3/8" expansion space between flooring and all walls and vertical objects such as pipes and cabinets. Use wood or plastic spacers during installation to maintain this expansion space. Lay subsequent rows of flooring by applying glue to side and end joints and fitting planks together with a tapping block. Remember to stagger end joints from row to row at least 8" apart.

Clean up any adhesive that is on the face of the floor by using a damp rag – DO NOT allow adhesive to dry on the flooring face as it is difficult to remove without damaging the finish.

In-floor Radiant Heat:

Use only recommended flooring adhesive over manufacturer's recommended plywood substrate.

- Turn the heat off for 24 hours before, during and 24 hours after installation when installing over radiant heated subfloors
- Failure to turn the heat off may result in shortened working time of the adhesive.
- Floor temperature must not exceed **85°F (30°C)**.
- Failure to strictly follow adhesive manufacturer's guidelines may result in failure and void warranty.

Warning: Heating mats work very well under carpet, tile and stone, however we do not recommend to have them placed directly underneath a wood or bamboo floor. It is best to install wood or bamboo flooring over embedded floor heating systems.

***This type of installation requires a specific construction of the plywood subfloor and the installer for such must be familiar with the NWFA recommendations.**

NWFA (National Wood Flooring Association) can be reached at 800-422-4556 U.S. or 800-848-8824 Canada.

GENERAL RADIANT HEAT INSTALLATION GUIDELINES

- Radiant systems work effectively and with less trauma to the wood floor if the heating process is gradual, based on small incremental increases in relation to the outside temperature.
- Subfloors should have proper moisture tests according to testing procedures outlined by the NWFA.
- Avoid penetration of the heating element, tubing
- Concrete subfloors should be fully cured.
- With water-heated radiant-heat systems, a pressure test should be performed by a qualified plumber or the system installer prior to beginning the installation of the wood flooring.
- Radiant heat is dry heat and a humidification system may be necessary to maintain wood flooring in its comfort zone.

AFTER INSTALLATION

- Flooring should be one of the last items installed in a project. In order to protect the floors while other trades are finishing their work prior to final cleanup and turnover to the owner, use rosin paper and only use 3M® Blue Tape to hold the rosin paper to the floor (other blue tapes may damage the finish). Clean the floor thoroughly before laying the rosin paper to ensure that no debris is trapped underneath. DO NOT USE plastic film or other non-breathing coverings as this can cause the floor to become damaged from humidity buildups.
- Remove expansion spacers and reinstall base and/or quarter round moldings to cover moldings to cover the expansion space.
- Dust mop or vacuum your floor to remove any dirt or debris.
- It is suggested that you buff the floor with lamb's wool pads in order to remove any loose splinters, residues, foot prints, etc.
- Install any transition pieces that may be needed (reducers, T-moldings, nosing, etc.).
- If using glue-down method, do not allow foot traffic or heavy furniture on floor for 24 hours

IMMEDIATELY AFTER INSTALLING OIL FINISHED FLOORS

- Vacuum the floor
- Clean the floor thoroughly with WOCA REFRESHER diluted in water using:

1 CUP of WOCA REFRESHER per 5 QUARTS of warm water

- In a bucket, add 1 cup of WOCA REFRESHER to 5 quarts of warm water.
- Damp mop only
- Make sure you rinse the cloth in another bucket of clean water, as you do not want to reincorporate the dirt back onto the floor.
- Let dry for 2 hours minimum before resuming traffic
- WOCA REFRESHER is available in natural (for natural and colors other than white) and white (for white oiled floors).

- Perform normal daily or weekly cleaning by vacuuming or dry mopping grit, dust etc.

Protection and Maintenance of Your Floor

Lasting beauty can be achieved through purchasing a quality floor covering and providing proper on-going maintenance.

Fading: Natural floors contain organic pigments and are subject to fading when exposed to direct sunlight. Where possible, use drapes or other systems to protect your floor from excessive light.

Joints: Natural flooring reacts to the conditions in the environment.

Natural flooring plank systems expand and contract in response to fluctuations in temperature and humidity. Controlling the environment, maintaining an adequate temperature and relative humidity, will minimize the visible effects of normal contraction and expansion.

Optimum recommended temperature is 70°F and relative humidity is 30% - 50%. *In very dry climates, the use of a humidifier might be necessary.*

Photosensitivity: Natural Floors cork, bamboo, and hardwood floors are photosensitive and will change color as they age or are exposed to U.V. light. In some species (i.e. bamboo, cork), the natural pigmentation will be lost and can develop a "bleached" appearance. In many exotic hardwood species (i.e. Tigerwood), the flooring develops a rich patina that will darken the appearance and enhance the natural beauty of the material.

As this is a natural occurring phenomenon, accelerated with exposure to U.V. light, it is not considered a material defect and is excluded from coverage under the provisions of Natural Floors Limited .

Tips to Minimize Fading/Discoloration

- Avoid rubber-backed mats and rugs, as the backing may discolor your floor.
- Change the location of your rugs periodically. Rearrange more frequently if they are placed in front of doors and windows.
- Use light filtering window treatments (i.e. blinds, drapes, window film) that will help prevent sunlight exposure.
- Rearrange furniture seasonally to allow the flooring to darken and age uniformly.

If completing a flooring extension or board replacement after the original installation has been down for a period of time, the new flooring will have a lighter appearance. As the material is exposed to natural light, it should eventually blend in with the surrounding areas. However, due to the age of your flooring, surface wear (and/or) exposure to U.V. light, Natural Floors cannot guarantee replacement flooring will be a 100% match to your existing product.

Remember that color variation is to be expected with natural products. However, should an individual plank be doubtful as to appearance or dimension the installer should not use this piece.