



WOVEN BAMBOO FLOORING INSTALLATION INSTRUCTIONS

READ THESE INSTRUCTIONS THOROUGHLY BEFORE BEGINNING INSTALLATION. IN ADDITION TO THESE INSTRUCTIONS, WE RECOMMEND THAT THE INSTALLER FOLLOW ALL INSTALLATION GUIDELINES SET FORTH BY THE NATIONAL WOOD FLOORING ASSOCIATION (WWW.NWFA.ORG). WHERE THESE INSTRUCTIONS DIFFER FROM NWFA GUIDELINES, THIS DOCUMENT TAKES PRECEDENCE. THESE INSTALLATION INSTRUCTIONS DO NOT APPLY TO PRODUCTS OTHER THAN STRAND WOVEN BAMBOO FLOORING. 071408

PRE-INSTALLATION JOBSITE REQUIREMENTS

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 distributor immediately and arrange for replacement. Manufacturer 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. Manufacturer 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, and subsequent gapping.

Permanent HVAC should be on and operational and maintained between 65-75 degrees Fahrenheit with relative humidity of 35%-55% for a minimum of 7 days prior to delivery, as well as during and after installation of the flooring. **When installing over radiant heat, additional restrictions apply – see below.** Humidity levels below 35% will most likely cause movement in the flooring, including gapping between pieces and possible cupping and checking in the face.

Store Strand Woven Bamboo flooring at installation area, with the ends of all boxes completely opened, to allow flooring to acclimate to room humidity. Do not store directly on concrete or near outside walls. Flooring should be acclimated until its moisture content is within 3% of the moisture content of the subfloor. The closer the match in moisture contents, the better the floor will perform and appear. The HVAC system should be operating normally throughout the acclimation period, and portions of the flooring should be distributed to acclimate in the actual rooms where each portion will be installed. Failure to acclimate properly may result in shrinkage/gapping or cupping/buckling.

PLEASE NOTE: Acclimation will progress more slowly with Strand Woven Bamboo than with most hardwoods due to its extreme density. In dry climates, proper acclimation may require several weeks. Also, when checking the moisture content of Strand Woven Bamboo, pin-type moisture meters can give misleading readings because the resin content of the material inhibits its electrical conductivity. Non-intrusive surface meters tend to give more accurate readings than pin-type meters, but they are still not completely accurate. (If you choose to use a surface meter, set it for the standard Douglas Fir correction and then subtract 3%.) **We strongly recommend oven dry tests** as the only truly accurate way to measure Strand Woven Bamboo's moisture content. (To measure moisture content via an oven dry test, cut, number and weigh several samples. Dry them in an oven until their weights stop decreasing. Calculate the differences between the original weights and the final dry weights, then divide those differences by the final dry weights to find the actual moisture contents of each sample.)

This flooring is not warranted for installation over electric radiant heat systems. Only hydronic systems are approved. Please carefully read the “Radiant Heat” section below (p. 4) before finalizing product selections.

PRE-INSTALLATION SUBFLOOR REQUIREMENTS

Acceptable subfloor types:

- CDX plywood - at least 5/8” thick for joist spacing up to 16” on center, minimum 3/4” thick for joist spacing greater than 16” on center (19.2” maximum)
- Underlayment grade particleboard (minimum 40 lb. density) - glue-down only
- OSB - at least 3/4” thick, PS 2-92 rated or PS 1-95 rated
- Concrete slab - glue-down only
- Existing wood floor - must be smooth, level, well-adhered and unfinished (if gluing new flooring)
- Resilient tile & sheet vinyl - glue-down only; vinyl must be new and non-urethane-coated

- **Please Note:** lightweight concrete (gypcrete) is NOT an approved subfloor for glue-down installations

All Subfloors must be:

- Dry and will remain dry year-round. Moisture content of wood sub floors must not exceed 12%, wood flooring moisture content must be within 3% of wood subfloor moisture content, and concrete must not exceed 3 lbs. per Calcium Chloride Test (test method ASTM 1869-89), or 2 lbs. when installing over radiant heat.
- Structurally sound
- Clean: Thoroughly swept and free of all debris. For glue-down installations, 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 an underlayment 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 Ardex® K-15 Portland Leveling Compound.

All concrete should be tested for moisture using a Calcium Chloride Test, and the result must not exceed 3 lbs. (2 lbs. when installing over radiant heat). Ceramic tile, resilient tile and sheet vinyl must be well-bonded to subfloor, in good condition, clean and level. Do not sand existing vinyl floors, as they may contain asbestos.

If gluing down on concrete (even if you believe it is dry) which is on or below grade, it is highly recommended to use a concrete sealer approved by the manufacturer of the adhesive you have chosen. 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. This will lead to subsequent floor failure. Manufacturer is not responsible for site related moisture issues.

INSTALLATION TOOLS

For all installation methods:

- | | | |
|-----------------|----------------------------------|-----------------------|
| • Tape measure | • Wood or plastic spacers (1/2”) | • Chalk line |
| • Tapping block | • Crosscut power saw | • Pry bar or pull bar |
| • Pencil | • Hammer | • 3M® 2080 Blue Tape |

For glue-down installation method (recommended), you’ll also need:

- Flooring adhesive: EcoTimber® HealthyBond Adhesive or Bostik® Best
- On concrete slabs that are on/below grade, we strongly recommend using a concrete sealer approved by the adhesive manufacturer.
- Trowel per flooring adhesive manufacturer’s recommendations.

For nail-down installation, you will also need:

- Pneumatic nailer/stapler appropriate for 9/16” thick flooring and 1-1/4” or 1-1/2” long 18-20 gauge cleats or staples (staples should have 1/4” wide crown). Examples of tools that have been used successfully with this flooring include the Powernail Model 50P nailer and the SpotNails Model WS4840W2 “Striker” stapler, but other nailers/staplers may work equally well. Always test nailer/stapler to ensure that it is not damaging the flooring or causing dimpling before proceeding with installation.
- **NOTE: Staples or cleats larger than 18 gauge (i.e., 15 gauge) will damage this flooring and void the warranty.**
- Nylon-coated nails or staples to fit the selected nailer/stapler
- Air compressor

GENERAL INSTRUCTIONS – ALL METHODS

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

Since Bamboo, like wood, expands with any increase in moisture content, always leave at least a 1/2” expansion space between flooring and all walls and any other permanent vertical objects, (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 1/2” expansion space. No area of connected flooring can span greater than 30 feet in width or 60 feet in length without an expansion gap. For larger spans, install T-moldings, gaskets or other transition pieces every 30 feet (across the width of the planks) that allow the flooring to expand and contract. More or less spacing may be needed depending on geographical area.

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 1/2” 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, as most walls are not straight.

Work from several open boxes of flooring and “dry lay” the floor before permanently installing it. This will allow you to select the varying grains & colors and to arrange them in a harmonious pattern. The actual floor may differ in grain and color from the samples used in selecting the product. This is not a product defect. It is the installers’ responsibility to work with the end user to determine the expectations of what the finished floor will look like. If the range of color in the shipment does not appear satisfactory after opening a few boxes, do not begin installation. Contact your dealer immediately to arrange a return.

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 (greater than 8”) 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, as tapping the flooring itself will result in edge damage. **Never apply pressure to the groove edge of the flooring – only use the tapping block against the tongue.** When near a wall, you can use a pry bar or pull bar to pry close the side and end joints. Take care not to damage edge of flooring. For glue down applications, use 3M® 2080 Blue Tape to hold any pieces which might have side bow and need to be held straight & tight until the adhesive sets. Do not allow tape to remain on floor longer than 30 minutes and remove tape prior to cleaning floor with a cleaner or solvent. Do not apply tape to flooring that has been previously wiped with a solvent.

GLUE DOWN INSTALLATION (recommended)

Lightweight concrete (gypcrete) is NOT an approved subfloor for glue-down installations.

PLEASE NOTE: some adhesives require that you allow ‘flash time’ between when you trowel out the adhesive and when you lay the flooring. This ‘flash time’ allows moisture from the adhesive to evaporate before the adhesive makes contact with the wood. FAILURE TO ALLOW ADEQUATE FLASH TIME WILL RESULT IN CUPPING/BUCKLING. Carefully review the adhesive manufacturer’s instructions for proper trowel size, minimum temperature, adhesive set/flash time, and open time before beginning installation of flooring.

Make sure subfloor is tested for moisture content first and is properly prepared. On concrete subfloors that are on or below grade (ground level), always assume the worst. Even if they measure dry, we now recommend the application of a concrete sealer approved by the manufacturer of the adhesive you have chosen. Carefully follow the manufacturer's recommendations for application/installation.

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. Use 3M® 2080 Blue Tape to keep installed planks straight and tight until the flooring adhesive has set.

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 FROM 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. Manufacturer is not responsible for finish damage that might be caused by adhesive that has been allowed to dry completely.

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

STAPLE/NAIL DOWN INSTALLATION

Make sure subfloor is tested for moisture content first and is properly prepared. Use a flooring stapler/nailer of your choice that is appropriate for 9/16" thick flooring after testing 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 you see dimpling, STOP and adjust the stapler/nailer shoe, angle/place of staple entry or air pressure until test planks confirm that dimpling is no longer occurring. Manufacturer is not responsible for replacing material that has been installed with dimples.

The correct air pressure needed to install this flooring will vary with subfloor type, but generally ranges between 55 and 95 psi. Regardless of air pressure, staples or cleats larger than 18 gauge (i.e., 15 gauge) will damage this flooring and void the warranty.

For the first and second starting rows: lay first plank inside chalk line with groove edge toward the wall. Since it can be difficult to get the nail gun in place next to the wall, you may wish to glue down the first rows rather than face-nailing them and leaving unsightly nail holes that must be filled with putty. Make sure the starting rows are straight and drawn tight. After gluing down these rows with one of the approved adhesives (or Liquid Nails® LN-901), set weight on top of them and allow them to set securely before commencing stapling/nailing the additional rows.

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 no closer than 3" to each end (to prevent splitting). Remember to stagger end joints from row to row at least 8" apart and use a tapping block to fit boards together. Periodically check (looking from a low angle) to make sure that the stapler/nailer is still not causing dimpling. It may be necessary to face-nail and or glue down the flooring in doorways or tight areas where the nailer/stapler can't fit. The last two rows will need to be face-nailed or glued in the same manner as the first two.

RADIANT HEAT

This flooring is not warranted for use over radiant heat systems heated by electric elements. Only hydronic systems are approved. Hydronic systems must include in-floor temperature sensors and an outdoor thermostat that allows the system to adjust the water temperature according to anticipated heat loss. Flooring installed in multi-unit projects where the water temperature is not regulated separately in each unit is not warranted.

All concrete must be allowed to properly cure and dry for a minimum of 4 weeks prior to the operation of the radiant heat system. The system should then be operated at 2/3 maximum output for a minimum of 2 weeks prior to installation of flooring to further allow moisture from the concrete to dissipate and reach equilibrium. This procedure must be followed regardless of the time of year. Four (4) days prior to flooring installation, reduce thermostat to 65°F.

Prior to installation over radiant heat moisture testing must be conducted and documented per ASTM 1669-89 (Calcium Chloride Test) or, for wood subfloors, using a pin type meter. **The moisture content for concrete subfloors must not exceed 2.0 lbs. per 1000 square feet per ASTM 1669-89 (Calcium Chloride Test).** If it exceeds these limits, do not install the flooring.

As always, relative humidity of the jobsite must be maintained between 35% and 55%. **Use of a humidification system may be required to maintain the proper humidity level, particularly over radiant heat.** Failure to maintain proper humidity levels can result in excessive dryness and will void all warranties.

Beginning 48 hours after installation, slowly raise the temperature of the heating system to its preferred operating level over a period of 5 days. **The surface temperature of the subfloor must never exceed 82°F in any location. The temperature setting must always remain within 15°F of normal operating level, and should never be turned completely off.** Excessive heat, rapid heating, and/or failure to maintain humidity levels between 35% and 55% are likely to cause cracking, cupping and other forms of floor failure. **Seasonal gapping and slight surface checking (cracking) should be expected in installations over radiant heat and do not constitute a product failure.**

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® 2080 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 the expansion space.
- Dust mop or vacuum the floor thoroughly to remove any dirt or debris.
- Buff the floor with lambs 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 the glue-down method, do not allow foot traffic or heavy furniture on floor for 24 hours.**
- Place walk-off mats at all entrances to help collect dirt and debris that could damage or dull the flooring finish.
- Install felt floor protectors underneath all furniture.
- In areas such as bathrooms, kitchens, and spaces where food service occurs, top-coating the floor will help prevent against moisture damage. In heavy food service areas such as restaurants, two to three top-coats are recommended. See below under “Top-coating/Re-coating” for specific instructions.

CLEANING AND MAINTENANCE

Prevent Scratches – There is no such thing as a “scratch-proof” wood floor, but following these basic procedures will reduce the likelihood and frequency of scratches:

- Felt padding should be permanently affixed to the legs of all furniture before it is moved into the space.
- Do not allow people to wear spiked heels on the floor, which will severely damage even the hardest wood floors and finishes.
- Pet claws should be properly trimmed at all times.
- Work boots and shoes that may have pebbles lodged in the soles should be removed prior to entering.

Remove Grit - Care should be taken to prevent dirt, sand and grit from accumulating on the surface of your floor. They will act like sandpaper and abrade the finish. Walk-off mats should be placed inside and out at all exterior exits, and the floor should be swept or vacuumed frequently. All mats or rugs should be cleaned and/or replaced on a regular basis. They should also be moved occasionally to allow natural color changes caused by light to occur evenly in all areas.

Use Proper Cleaning Products - To clean the factory urethane finish, we recommend the Bona-X® Swedish Formula Hardwood Floor Cleaner (www.bonakemi.com, 800-574-4674). Vinegar mixed with water (applied with a slightly damp mop – never wet-mop) is also effective at removing scuffs, dried spills, and dust film. To remove hard-to-clean substances such as chewing gum, use Goof-Off® or Goo-Gone®, available at most hardware stores and supermarkets. Floor waxes, oil soaps, and petroleum-based cleaners should not be used under any circumstances.

Avoid Standing Moisture – Water and hardwood floors don’t mix. Never wet-mop your floor, and always clean up spills and standing water as soon as possible. With water or any other cleaning agent, be sure to thoroughly ring out the applicator or mop

prior to applying it to the floor. A damp mop is fine as long as the moisture is limited to an amount that will evaporate almost immediately. Moisture that is allowed to seep into the seams between the planks may cause damage to your flooring. Do not allow soiled mats or rugs to stay on the floor as they can trap moisture on the surface.

Top-coating/Re-coating - Periodic recoating in any area will help prolong the life and restore the new appearance of your floor. By recoating the floor at the first signs of wear, you will be able to bring your floor back to new condition with relatively little cost and inconvenience. To top-coat or recoat your floor, lightly screen (abrade) the top surface of the factory finish and then apply Bona Traffic® floor finish by Bonakemi® (www.bonakemi.com, 800-574-4674). Bonakemi® also offers the Bona Prep® system that allows top-coating without screening or sanding. Follow all BonaKemi® application instructions carefully.

For questions or assistance, call 866-554-4637.