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## Strand Woven Tongue & Groove Flooring Installation Guidelines

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*Please read Bamboo Revolution's warranty, maintenance instructions, and ALL of the following guidelines before opening any packaging or beginning your flooring installation. This information is provided as a courtesy to our customers and is meant to be understood as an installation guideline only.*

Bamboo Revolution recommends using the services of a professional hardwood flooring installer. For more information and guidelines on the installation of hardwood flooring, please contact the National Wood Flooring Association (800-422-4556) or review their website ([www.woodfloors.org/consumer](http://www.woodfloors.org/consumer)).

Because bamboo is a natural fiber, it is not uncommon for natural variations in color to occur within and between individual flooring planks. Bamboo Revolution's warranty does not cover variations in color either in individual planks, between the planks, or the variations in color between our product samples and the installed flooring. An industry standard of 5% material overage should be added to the actual square footage required for cutting and grading allowances.

Prior to installation, the installer and/or homeowner should inspect all material to ensure the material received matches the work order. Any visible defects or discrepancies should immediately be reported to your distributor or dealer. Installation of any material serves as acceptance of that material as delivered.

It is considered the installer's/owner's responsibility not to install flooring having finish, manufacturing, or unacceptable naturally occurring material variations. Individual planks with defects should not be installed or the defect should be cut-out prior to installation. The Bamboo Revolution warranty does not cover materials with visible defects once they are installed.

Bamboo Revolution makes no warranty or guarantee of the quality of the chosen installer's work or of a particular installation performed by the installer. Bamboo Revolution disclaims all liability for any errors or improprieties in the installation of its products by an installer.

### **Pre-Installation Notes**

It is considered the sole responsibility of the installer/owner to determine if the job site's sub-floor and environmental conditions are suitable for the installation of Bamboo Revolution flooring and accessories.

Bamboo Revolution flooring should be allowed to acclimate on the job site for a minimum of three days. Open each box and remove the shrink wrap and foam and stack the flooring planks off the ground to allow for complete air circulation. This acclimation period should occur at expected normal room temperature and humidity levels before and after installation. Damp or cold conditions before and during installation should be avoided. The maximum difference in moisture content between the sub-floor and the flooring material should be no more than 3%. On-site humidity levels should remain between 40% and 60%. It is important to note that gaps in the floor may come and go seasonally due to temperature and relative humidity changes. The amount of movement depends upon the temperature, moisture content of the flooring and sub-flooring (bamboo expands and contracts as moisture content rises and falls) and the dimensional stability of the material.

Bamboo Revolution prefinished flooring is best installed by nailing, stapling, or gluing planks to a wood sub-floor. Note: If gluing directly to a concrete slab, installation may only be done at or above grade. Do not install below grade. Flooring may also be installed over radiant floor heating systems (see "Radiant Floors" section below).

## Tools Recommended:

### Nail or Staple Installation:

- Hammer (1 lb.)
- Table saw
- Miter saw (a.k.a. Chop saw)
- Pneumatic tongue & groove flooring nail gun with 1 ½" – 2" long 18 gauge cleats (see below for recommended models)
- Moisture barrier such as 15 lb. asphalt saturated felt paper or equivalent
- Other helpful supplies: Tape measure, chalk line, carpenter square, scribing block, flat bar, ½" wedges, low adhesive painters tape

### Glue Down Installation:

- Hammer (1 lb.)
- Table saw
- Miter saw (a.k.a. Chop saw)
- Premium wood flooring adhesive (see below for recommended products)
- Other helpful supplies: Tape measure, chalk line, carpenter square, scribing block, flat bar, ½" wedges

## Sub-Floors

Wood sub-flooring surfaces must be clean, dry, and if gluing the flooring, free of contaminants that would interfere with an adhesive bond. A moisture vapor retardant such as 6 mil polyethylene film should be placed in crawl spaces. Fix any squeaks or movement in the sub-floor prior to installation. The sub-floor surface must also be level and smooth prior to the installation of any flooring. High spots should be sanded flat. Bamboo Revolution recommends using ¾" CDX plywood as a nailing substrate or for a glue application, 5/8" CDX plywood for 12" on center and 16" on center floors, and ¾" CDX plywood for 24" on center floors. A sub-floor of 1 ½" plywood over joists at 16" on center is recommended for an optimal installation.

Concrete sub-floors must be tested for moisture in more than one place for consistent readings. Bamboo Revolution recommends using the Calcium Chloride Test Method to quantify the volume of moisture vapor radiating from a concrete slab surface. If vapor pressure exceeds 3 lbs. per 1000 square feet in 24 hours it is recommended not to install the floor. Concrete should be checked for flatness prior to installation and any low spots or voids should be filled to a minimum of ¾" within a 10' radius or ½" in a 6 foot radius, and high spots ground to surface. Surface must be smooth and free of debris, oils, grease and solvents.

## Nail Down

Prior to installation, place a 15 lb. asphalt saturated felt paper or equivalent, meeting ASTM D4869 standards, over the entire sub-floor following the manufacturer's instructions. Note: Nail gauges larger than 18 gauge (i.e. 15.5 gauge) will damage strand woven flooring and void Bamboo Revolution's warranty. The following nail guns have been tested by their manufacturer for use with our strand woven flooring products. Bamboo Revolution recommends Powernail products ([www.powernail.com](http://www.powernail.com)), though other brands/models may work equally well. The use and selection of any nail gun is at the sole discretion and responsibility of the purchaser/installer.

- The **Powernail Model 50P** is a pneumatic tongue & groove flooring nailer which uses a 1 1/2" long, 18 gauge cleat.
- The **Powernail Model 50M** is a manual nailer which uses a 1 1/4" long, 18 gauge cleat.
- The **Powernail Model 200** is a pneumatic tongue & groove flooring nailer which uses a 1 1/2" long, 20 gauge "E" cleat and was tested using a U-1 adapter pad and no shims.
- The **Powernail Model 250** is a manual nailer which uses a 1 1/2" long, 20 gauge "E" cleat and was tested using a U-1 adapter pad and no shims.

**Note:** The correct air-pressure will vary with the sub-floor material, but will likely range between 75-95 PSI. Due to the extreme density of strand woven flooring, it is the responsibility of the installer to determine the correct PSI for their staple/nail gun and unique installation environment. Test nail a sacrificial plank to the sub-floor to check for correct air pressure, surface damage, tongue damage (i.e., splitting), etc., before proceeding with the installation. Flooring should be square with the space and perpendicular to the joists. Leave a 7/16" expansion space from base plate or wall. Starter rows shall be held firmly in place by gluing, wedging or blind nailing. Once starter rows are secure, additional rows shall be nailed directly above the tongue at a 45-50 degree angle to the face. Ensure nail head rests cleanly in the "nail" pocket. Nails shall be placed no closer than 3 inches from the ends of each plank and then spaced at 8" intervals or as required to prevent tongue splitting/damage.

## Glue Down

For glue-down applications, Bamboo Revolution recommends using a premium wood flooring adhesive such as Sika T55, or DriTac 7500 Eco-Urethane. The sub-floor must be extremely flat, and the flooring should be square with the space and run perpendicular to the joists leaving a  $\frac{7}{16}$ " expansion space from base plate or wall. Starter rows should be held firmly in place by wedging or blind nailing. Once the starter rows are secure, apply the adhesive in a Wet-Lay or Walk-on-Work method of installation (see below). It is helpful to apply weight to hold flooring down during drying time. All adhesive spillage should be removed immediately, using methods defined within the adhesive manufacturer's instructions, to prevent permanent damage to the flooring.

**Wet-Lay Method:** Apply adhesive directly to substrate with a suitable trowel. Immediately place flooring onto "wet" adhesive. Follow all of the adhesive manufacturer's instructions.

**Walk-on-Work Method:** Apply adhesive directly to substrate with a suitable trowel and allow it to develop tack (which could take an hour or more depending on temperature and humidity). Once the adhesive is tacky begin installing the flooring directly onto the adhesive. Immediately roll finished installation with 150 lb. roller. The room, flooring and adhesive should all be conditioned at room temperature for 72 hours before and after installation. Follow all of the adhesive manufacturer's instructions.

## On floors wider than 20 feet

In an effort to minimize expansion, floors that are wider than 20' may require more or less spacing depending on geographical area, interior climate control and time of the year installed. In some areas, additional spacing may not be necessary. Where spacing is required, use a washer or removable spacer to leave additional space every few rows and/or start in center of room and work out to both sides (Reference: *National Wood Flooring Association Technical Reference Manual*).

## Radiant Floors

Bamboo Revolution's strand woven bamboo flooring is suitable for installation over many radiant heating systems as long as the surface temperature of the installed flooring never exceeds 85°F. Due to the fact that radiant heating systems create "dry" heat, it is essential that the relative humidity in the installation environment be maintained between 40-60% and that the maximum difference in moisture content between the sub-floor and the flooring material never exceed 3 percent. The owner/installer assumes sole responsibility for ensuring that the job site has environmental conditions/controls suitable for the installation of Bamboo Revolution flooring over the chosen radiant heating system. The radiant heat system needs to be in operation for at least 7 days prior to installation, shut off 4 hours prior to installation, and then returned to operation once the installation is complete. When choosing an installer for application over radiant heat, consider a member of the Radiant Panel Association. For more information, please refer to [www.radiantpanelassociation.org](http://www.radiantpanelassociation.org).

## Maintenance

Bamboo Revolution recommends vacuuming or sweeping in order to remove dirt and grit prior to cleaning the flooring. When a spill occurs, make sure to soak up the bulk liquid promptly. As with all natural products, exposure to the sun and ultra-violet rays can accelerate the oxidation of bamboo. Because caramelized bamboo products will lighten and natural bamboo products will tend to darken over time, periodically rearrange rugs and furniture to allow for even aging of the flooring. Use area rugs in high traffic areas. Install wood guards on the feet or legs of furniture.

Do not use wax, oil soap or other household cleaners. Bamboo Revolution recommends using either WoodWise Floor Cleaner by Design Hardwood Products or Bona Swedish Formula® MicroPlus Hardwood Floor Cleaner by BonaKemi.

Proper care and maintenance can extend the life of your floor for many years; however, at some time a re-coat or total refinishing may be desirable. To re-coat your floor and remain in conformance with the Bamboo Revolution warranty, follow the manufacturer's instructions at either of the following:

- Basic Coatings Tykote Sandless Re-coating System ([www.BasicCoatings.com](http://www.BasicCoatings.com); 800.441.1934 )
- BonaPrep™ Re-coating Adhesion System by BonaKemi USA ([www.bonakemi.com](http://www.bonakemi.com); 800.872.5515)