



General Installation Instructions

Please read these installation instructions carefully. By following these instructions, BAMBOOADVANTAGE flooring will provide you with many years of satisfaction.

BAMBOOADVANTAGE pre-finished or unfinished flooring is best applied by nailing or gluing the planks to a wood sub floor. In addition, BAMBOOADVANTAGE flooring can be floated, glued directly to a dry concrete slab or applied over radiant floor heating systems. Bamboo flooring is very stable (it has very low expansion and contraction) but like virtually any flooring material, wood or otherwise, must not be installed in anything other than dry conditions. Please take similar precautions with regards to moisture as you would with a solid wood floor. Do not install BAMBOOADVANTAGE flooring in damp basements.

Because bamboo is a natural fiber, variations in color naturally occur. Each box should be inspected for differences in color and staggered throughout the floor. It is the responsibility of the installer/owner to determine if the job site sub floor and job site conditions are acceptable for the installation of the bamboo. BAMBOOADVANTAGE declines any responsibility for failure resulting from or connected with sub floor, sub-surface, or job site damage, or deficiencies after flooring has been installed.

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

Jobsite Conditions

Flooring should be allowed to acclimatize on site a minimum of three (3) days. Open each box, and remove the shrink-wrap to expose the floor boards to the existing conditions. The acclimation period should also be at expected normal room temperature and humidity levels before and after installation. Damp or cold conditions before installation should be avoided.

A moisture meter or other applicable methods must be used to check the subfloor and the bamboo flooring before installation begins. Do not install the floor until there is less than 3% difference in moisture levels between the two¹.

¹ Note: National Association of Home Builders (NAHB) performance guidelines identify that cupping up to 1/16" in a 3-inch maximum span may occur naturally in hardwood flooring. This would be caused by changes in humidity, moisture of the subfloor or other means, over a short period of time. Anything over 1/16" would be considered excessive and should be investigated. In either case, this is not a product defect, but a reaction to changes in the environment.



Relative humidity should be maintained between 30-50% to minimize cracks between the boards and excessive moisture causing expansion related issues.

Subfloors

Wood sub-flooring surfaces must be clean, dry, and if gluing the flooring, free of contaminants that would interfere with an adhesive bond. Sub-floor or underlayment nailing surface also must be level and smooth prior to installation of flooring. We recommend 3/4" CDX grade Plywood subfloor/underlayment or Oriented Strand Board (OSB) equivalent as a nailing substrate when installing on an uneven concrete floor. When this type of installation is performed on a concrete sub-floor, it is recommended that a polythene membrane be placed beneath the plywood as a precaution against dampness. Please note: particleboard is not considered an adequate subfloor material. The preferred floating subfloor system should have 2 layers of 1/2" CDX grade Plywood.

Concrete subfloors must be dry. Following a few ASTM tests will help to ensure you have a safe, long lasting installation. Please follow ASTM standard 1869-4 which is the specific preparation/application instructions for calcium chloride testing. Flooring must not be installed if vapor pressure exceeds 3 lbs. per 1000 square feet in 24 hours. The calcium chloride test only measures vapor emission from the top one inch or so of the concrete slab. Since most concrete slabs dry from the top down, this may not measure moisture within the concrete subfloor. As a result, a second method must also be followed to determine the presence of moisture in the concrete slab by means of R-H testing or relative humidity testing. Please follow ASTM standard F-2170-2, as well as F-710 to determine when the concrete slab will be acceptable for installation. As indicated by ASTM F-710, PH testing must be performed in order to ensure the slab meets the requirements of the adhesive manufacturer. Additionally if a glue-down system includes an underlayment the contractor must verify that both layers of adhesive are compatible with one another and including the underlayment being installed. Many adhesive manufacturers or underlayment manufacturers may require that both layers of adhesive be the same. Please verify with your adhesive manufacturer and the underlayment manufacturer before purchasing your products.

Prior to installation, the concrete subfloor should be checked for flatness and any low spots and/or voids filled. Tolerance should be flat to within 3/16" in a 10' radius or 1/8" in a 6' radius. Surface must be smooth and free of debris, oils, grease and solvents. Generally, concrete slabs younger than 60 days are too wet for flooring installations and are not recommended.



For floating floor installations, these guidelines must be followed to mitigate the potential of gaps between the sub floor and the bamboo flooring. It should be noted that a typical floating floor will balance on the highest point in the room and exaggerate and low spots unless this guideline is followed. Regardless, some cushion like bounce will exist until the floor is populated with furniture at which time the majority of this condition will be resolved. It would be prudent to alert your customer to this basic property of a floating floor (this is not a product defect, this is the normal condition of a floating floor).

Nail Down

Flooring should be square with the space and parallel to its longest dimension. Always leave a 1/2-inch expansion gap from the wall. Starter rows should be held firmly in place by wedging, blind nailing or using adhesive. Once starter rows are secure, additional rows should be blind nailed directly above the tongue at a 45-50 degree angle to the face. Fasteners should be spaced at 10 to 12 inch intervals per plank with a minimum of two fasteners per plank. Nails or cleats should not be placed closer than 6 inches from the end of planks to prevent splitting.

Equipment

- **Powernailer 50P** pneumatic nail gun with 18 Gauge 1", 1-1/4", 1-1/2" or 1-3/4" powercleat nails.
- **HighPRO AS-4090** staple gun with 1-1/2 to 1-1/4 inch 18 Gauge narrow crown staples
- 15.5 gauge staples may be used with our 5/8" flooring however it is not recommended with our horizontal style 6' x 6" planks.
- Unless an experienced installer is performing the installation, it is not recommended that a manual nail gun is used. A pneumatic gun will provide more consistent results.
- To prevent accidentally stepping on your tools and damaging the floor, keep tools out of the way or place nearby on a piece of carpet for example, with the soft side facing down.
- Ensure that the appropriate shim is being used. All nail gun manufacturers can provide a shim for 3/8 & 5/8" flooring.
- ALWAYS test your equipment and air pressure on a few sample pieces before laying the actual floor.

Glue Down

If the glue down application is the method chosen, we recommend using a premium urethane-penetrating wood flooring adhesive such as "Bostik's Best". For glue down applications that are on or below grade (directly on concrete slab), a moisture barrier must be used. Bostik's MVP or other equivalent products must be



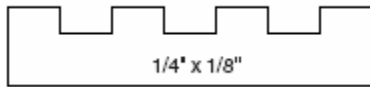
BAMBOOADVANTAGE

used if no other preventative measures are installed between the flooring and the concrete slab.

Flooring should be square with the space and parallel to its longest dimension. Starter rows (Qty 2) should be in the center of the room with the tongue's opposing one another. A spline or biscuit should be used to connect these two rows. Starter rows should be glued and held firmly in place and allowed to dry prior to laying the remainder of the floor. Always leave a 1/2-inch expansion gap from the wall.

Suggested Notched Trowel for Maximum Performance for Bostik's Best ONLY. If you are using any other adhesives, please refer to their technical installation instructions for proper use and tools:

This should be used with 5/8" plank



1/4" x 1/8" Square Notch
>1/2" Engineered Plank & 3/4" Parquet
Coverage: 40 sq. ft. per Gallon

This should be used with 3/8" plank



3/16" x 5/32" V Notch
3 ply and 5 ply Engineered Plank
Coverage: 50 sq. ft. per Gallon

Please refer to www.bostik.com for additional information.

Staining bamboo floors on-site

Bamboo may be stained any color. However, the staining does not assure a solid color but will be lighter or darker as determined by the various colorizations of the bamboo strips.

Six foot planks

Larger longer planks may have a tendency to bow in the middle. This is NOT a manufacturing defect, but rather the nature of bamboo planks. In nail-down installations, this is not a problem as the boards are easily straightened. For glue down or floating installations, ensure that an above average installation company is used. Using strapping and/or tape may be necessary during the installation process while the glue sets up. If installing the Horizontal style, a 15 gauge staple should NOT be used.

NOTE: Local-building codes may differ. Local building codes prevail. Follow local building codes.



Refinish or Repair

BAMBOOADVANTAGE flooring can be finished or repaired with any polyurethane or compatible coating. It is not necessary to re-stain the dark colored flooring because the carbonized or coffee color is impregnated all the way through the entire floorboard.

If the floor has not been waxed, it may not be necessary to remove the original finish. Degrease, lightly sand and apply fresh polyurethane. If heavy sanding is necessary, the wear surface on our flooring is thick enough to withstand a professional refinishing operation using a belt sander. When sanding, Always sand with the length of the board. Do not sand across the grain, as this will leave scratches in the bamboo.