



Solid Unfurled Bamboo Flooring

Installation Instructions

WARRANTY COVERAGE MAY BE LOST DUE TO FAILURE TO STRICTLY ABIDE BY ALL INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS IN THIS MANUAL. THIS INCLUDES THE USE OF IMPROPER TOOLS OR MATERIALS. READ ALL INSTRUCTIONS CAREFULLY.

PART I – INSTALLATION INSTRUCTIONS

Product Description

Our solid hardwood flooring planks are designed for use in multiple locations, such as ground floors, second floors or high-rise buildings; direct nailing to wooden subfloors. The products are pre-finished under ideal conditions that meet or exceed industry standards.

RECOMMENDED USE

<i>Grade Type</i>	<i>Nail Down</i>	<i>Glue Down</i>	<i>Float</i>
Above Grade	Yes	Yes	No
On Grade	Yes	Yes	No
Below Grade	No	No	No

<i>Sub-floor Type</i>	<i>Nail Down</i>	<i>Glue Down</i>	<i>Floating</i>
Concrete	No	Yes	No
Plywood & OSB	Yes	Yes	No
Old wooden floor & other non-wood sub-floor	SiteSpecific	Site Specific	No

Site Specific - depending on the degree of levelness, firmness and soundness of the sub-floor . Sub-floor should be sound, level and free of debris. The following is as defined by NWFA Hardwood Flooring Installation Guidelines-Section V for moisture testing:

- 1) Concrete moisture readings are not to exceed 4.5% on Tramex Concrete Moisture Encounter meter.
- 2) Calcium Chloride Test is not to exceed 3 lbs. per 1000 square feet in 24 hours.



*** Plywood must be COX-rated at least 3/4" thick. OSB must be 3/4", PS2 rated, and sealed side down.

Radiant Heating: Not suitable for radiant heating.

IMPORTANT: *Examine each plank carefully. Contact the dealer immediately if the material is not acceptable. Materials installed with visible defects are not covered under warranty. Manufacturer will not assume any responsibility for any materials that have already been installed. The manufacturer will not assume any liability for product damage caused by the use of unsuitable tools or the improper use of materials.*

Crucial Points to Remember

1. Installation should not be started until the wood has been at the jobsite for at least 4 days, but materials should be allowed to acclimate for as long as necessary to meet minimum installation requirements for moisture content in your area.
2. Install your floor under good lighting conditions. Installation site should be warmed up for 5 to 6 days before wood delivery regardless of the season to remove residual moisture in the subfloor. The floor surface must never be warmer than 85°F (29.5°C) or colder than 50°F (10°C) during or after installation.
3. Plan your project by making an installation sketch. Determine the installation starting point. Consider if it is one regular-shaped room, a number of rooms with landings, or rooms on one floor, including a hall or main room. Think about how to get the most out of your pocket. If in doubt, ask your dealer for advice.
4. Choose the floor plank direction. It is strongly recommended that you install boards at a 45° or 90° angle to the joist direction.
5. Take precautions at all times not to damage the finish. For example, place tools on a protective mat during installation. Vacuum or sweep floor frequently to eliminate sawdust and abrasives. Do not use vacuums with beater bars or hard plastic attachments.

Before starting installation, cut the bottom moldings around door frames to insert the floor planks underneath. Expansion joint is necessary to allow the wood to react to changes in ambient humidity. The expansion joint will be hidden by wood flooring moldings, such as T-molding, quarter round, etc., which will be nailed to the walls and not the floor.

Jobsite Preparation

Laying the floor should be the last step of your installation. Prior to the delivery of your flooring, make sure that:

- 3) The jobsite is properly enclosed, with all doors and windows installed.
- 4) Concrete, plaster, paint and the subfloor are completely dry.

- 5) The heating or ventilation system is working properly and that the conditions inside your home have been kept at an approximate temperature of 60-70°F (20°C) and a relative humidity of 35% to 50% for at least two weeks.
- 6) The floor of the crawl space (if there is one) is completely covered by 6-8 mil black polyethylene film and has adequate cross ventilation.

Wood Subfloor

The subfloor (plywood or OSB) moisture content should be between 6-10%, but not exceed 12%, and the difference in moisture between the subfloor and floor planks should not be greater than 4%. If the difference is too high, do not carry out installation. Please refer to the Equilibrium Moisture Content of Wood Map to determine acceptable moisture levels for your area. Wooden subfloors must be securely screwed down to joists to prevent any movements or squeaks. Inspect existing subfloor and replace subfloor that exhibits signs of water damage or structural weakness.

IMPORTANT: *When it comes to floor installation, moisture is an important element that should be emphasized. The installer and homeowner are jointly responsible for checking the subfloor moisture content. If the moisture content is too high, postpone floor installation. Never install a hardwood floor on wood subfloor if moisture test reading exceeds 12%. Any responsibility for failures or deficiencies related to job site quality is declined by the manufacturer.*

Installation Work

Once ambient conditions are correct, bring the cases of floor planks to the installation site. Open a case to check that product species, grade, color, size, and quality are correct. If all job-site conditions are in order, set the un-opened cartons indoors and spread across subfloor. Once product is properly acclimated, you may start installation. Open several cartons of flooring at the same time as this can let you balance plank length, color and wood-grain variation in the wood, and ensure planks can be arranged to reflect a homogenous floor covering.

Please advise your dealer immediately if any problems occur; our in-house installation team could be contracted to take over the installation if required. To avoid any variation in internal wood moisture levels before installation, avoid exposing the cases to rain or snow. Never store planks in unsuitable locations such as a shed, unheated garage, or basement.

IMPORTANT: *Prior to installing the floor, installer and homeowner must ensure that the installation site and subfloor meet the conditions in this document. Installer and homeowner are responsible for inspecting floor planks prior to installing them. Depending on the type of installation, you may also need special moldings for your floor such as nosing and reducer.*

NAIL DOWN INSTALLATION

Nail installation is only used with PS-2 rated oriented strand board (OSB) or plywood subfloors. Manufacturer recommends using 3/4" (18 mm) OSB or plywood on joists spaced no more than 19.2" (450 mm) apart, center-to-center. OSB or plywood must be structurally sound.

Recommended tools

- 1) Moisture Meter
- 2) Hardwood Flooring Cleat-Nailer (L-cleats only)
- 3) Chalk reel
- 4) Tape measure
- 5) Hammer
- 6) Pull bar
- 7) Knocking block
- 8) Electric Drill and 3/32" bit
- 9) Finishing spiral nails, and nail set
- 10) Use non-tarred felt paper on subfloor surface to reduce normal mechanical friction, and a 6 mil. Poly sheeting, if additional moisture protection is required.
- 11) Speed square
- 12) Floor screws
- 13) Electric saw or Hand saw

Preparing and Leveling the Subfloor

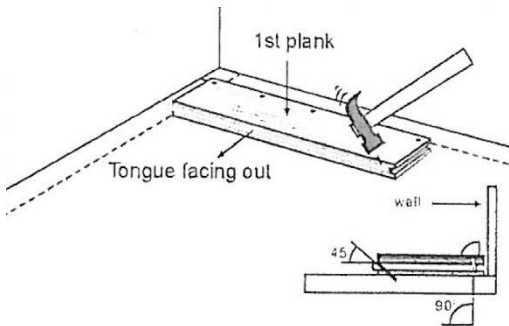
- 1) The subfloor must be firmly fixed to the joists to avoid any panel movement that could cause creaking. Use flooring screws if necessary to prevent creaking.
- 2) The subfloor surface must be level. The difference in level must not exceed 3/16" (5 mm) over a distance of 6' (1830 mm). Eliminate small surface irregularities with a sander or floor leveler.
- 3) Surface must be clean. Remove glue residue and staples, and drive in protruding nails.
- 4) Remove debris and dust with a broom or vacuum .
- 5) It is recommended that you use non-tarred felt paper on the subfloor surface to reduce normal mechanical friction between materials and facilitate installation. Lay the felt paper in the direction of the boards using staples, overlapping the ends by 3" to 4". Drive in staples.

Using the Nailer

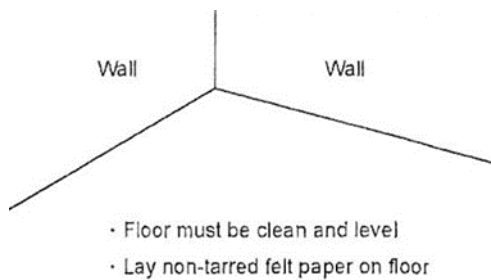
- 1) Practice using the floor nailer on a scrap plank. Follow the safety tips and instructions of the nailer manufacturer.
- 2) Clean the nail base plate regularly to ensure it does not damage the finish.

- 3) If you are using a pneumatic nailer, adjust the compressor air pressure for the hardness of the species and to insure proper nailplacement in tongue (about 80-90 psi). Follow the safety tips and instructions of the nailer manufacturer.

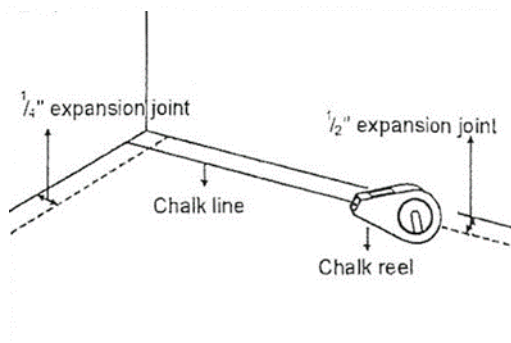
Nail Down Installation Steps



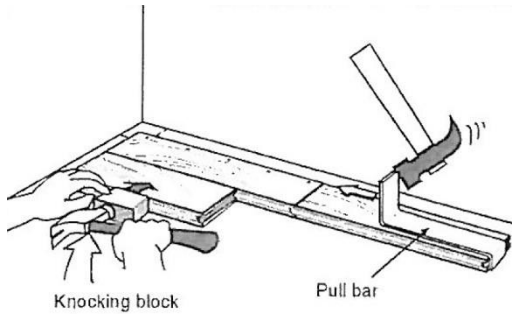
- Lay 15 lb non-tarred felt paper or equivalent (with 3" to 4" overlapping end) in the direction of the boards using staples. This will reduce the normal mechanical friction between materials and facilitate installation.
- Felt paper is not required if floor has acoustic membrane



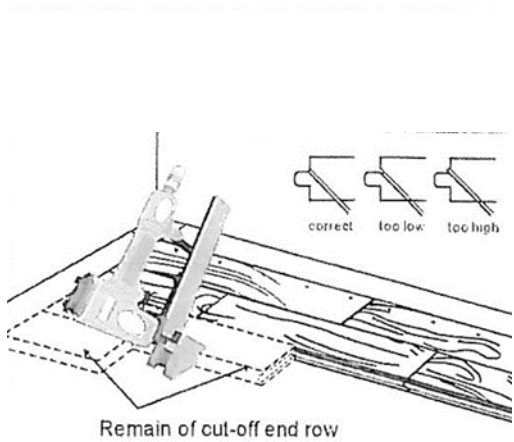
- Use chalk line to trace starting line with 1/2" expansion joint at the side and 1/2" at row end.
- Lay out 4 to 5 rows of planks ahead of time that match in terms of joints and color.
- Cut out imperfections planks or place them in less visible areas.



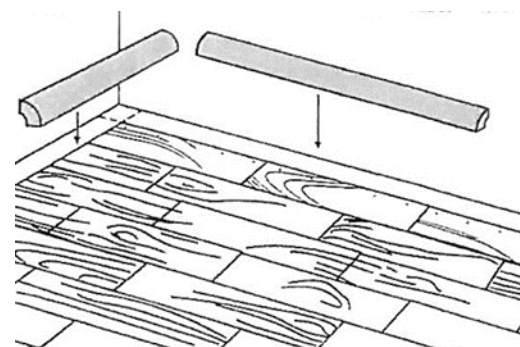
- Install the 1st plank along the starting line with the tongue facing out and groove facing the wall.
- 1st row must be hand-nailed. Drill holes at a 90° angle on the surface of the plank. Drive nails head in with a nail driver. Then drill holes at a 45° angle in the tongue and fasten with spiral nails.



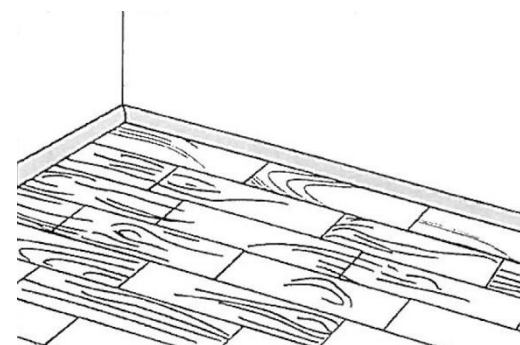
- Cut plank to fit end row, allowing for 1/2" expansion gap and fasten with pull bar.
- Start subsequent row using the remainder of the cut-off end plank from previous row. The remainder should be at least 6". Fasten with knocking block at the side.



- Use manual or pneumatic nailer for subsequent rows. Each plank should be nailed every 6". Fasten each plank with at least 2-nails. Do not nail less than 2" from plank end to prevent the tongue from splitting.
- For best results, stagger the joints 6" to 8" from the previous row and alternate lengths.



- The final planks should be installed the same way as the 1st plank.
- You may have to rip the last row lengthwise to leave a 1/2" for expansion joint.



- Completed installation with moldings.

Glue Down Installation

Our Solid Hardwood flooring can be glued directly to a concrete sub-floor, wood sub-floor, or terrazzo on the ground floor and second floor. Must not be installed over any type of vinyl; vinyl must be removed. Subfloor must be free of wax, paint, oil and debris. Terrazzo floors must be cleaned and stripped of all polishes.

Recommended tools

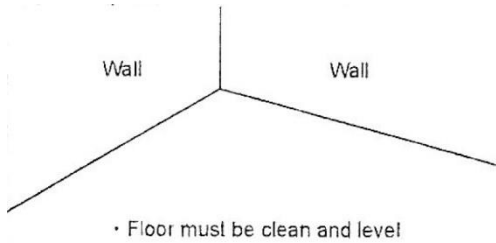
- 1) Moisture Meter
- 2) Bostik BEST or equivalent moisture-cured urethane adhesive
- 3) Bostik MVP moisture barrier (if required)
- 4) Notched Trowel-- follow Glue Manufacturer's guidelines for recommended size
- 5) Bostik Ultimate Adhesive remover or wipes
- 6) Guide Strip
- 7) Chalk reel
- 8) Tape measure
- 9) Hammer
- 10) Pull bar
- 11) Knocking block
- 12) Speed square
- 13) Flooring straps
- 14) 100 lb Roller
- 15) Electric saw or Hand saw

IMPORTANT: Do not apply any tape to the surface of your floor at any time during installation, or thereafter. This includes "special" tapes that say they are made for wood flooring.

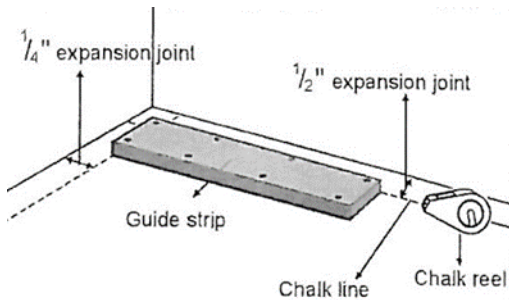
Preparing and leveling the sub-floor

- 1) The sub-floor should be free of any surface defect. If it is not, fill gaps with a Portland-based leveling cement (for concrete floors only) or sand down uneven areas.
- 2) The sub-floor must be level, i.e., a slope of no more than 3/16" (5 mm) over 10' (3048 mm).
- 3) The surface must be clean and free of debris and contaminants such as wax, paint, grease, dust, oil, nails, staples, etc.
- 4) For concrete installation, ensure that the concrete is not low-density (below 3000psi) or friable.

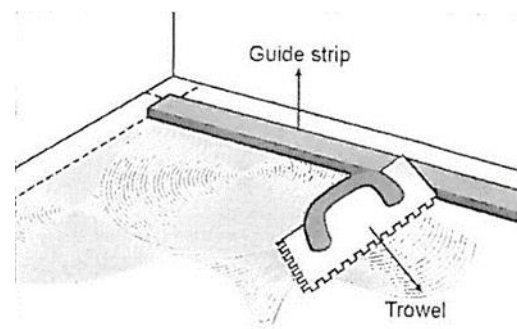
Glue Down Installation Steps



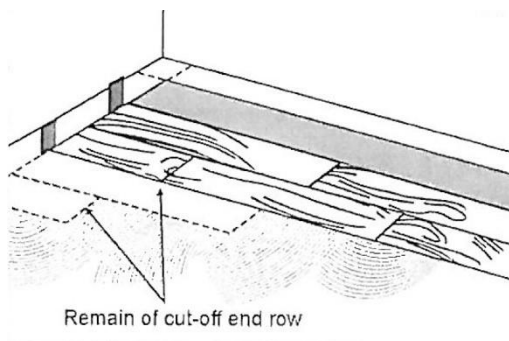
- The sub-floor should be free from any surface defect. If it is not, fill gaps with cement or sand.
- Lay out 4 to 5 rows of planks ahead of time that match in terms of joints and color.
- For concrete installation, ensure concrete is not low-density (below 3000 psi.).



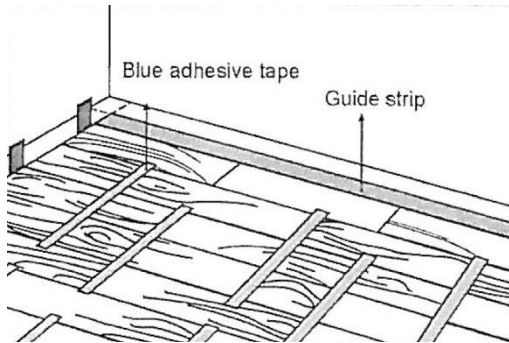
- Use chalk line to trace starting line with 1/2" expansion joint at the side and 1/2" at row end. Nail the guide planks along the starting line. The plank will serve as a guide for the 1st row of plank.
- Width of the guide plank will be the same as the width of the flooring you choose.



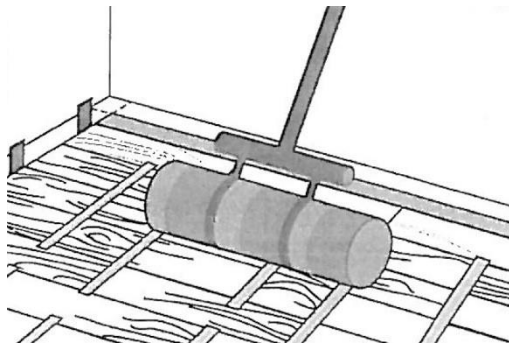
- Use the trowel and apply adhesive at a 45° angle from the starting line outward.
- Install the first plank along the guide strip with tongue facing you and the groove facing the starting wall.



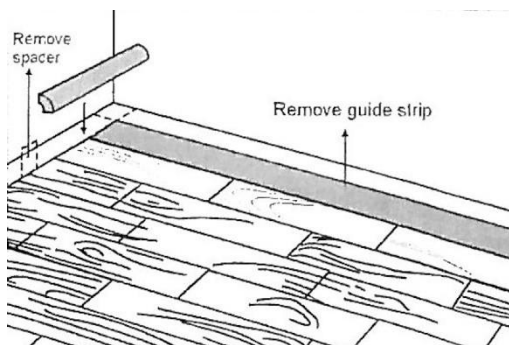
- Proceed from left to right to install other planks in the rows.
- Do small sections to ensure adhesive does not dry before the planks are laid.
- Use knocking block and pull bar to fasten the joint.



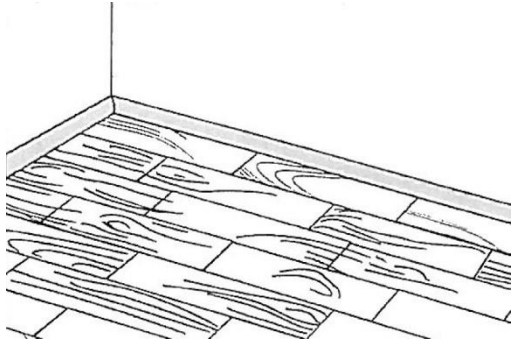
- Use blue adhesive tape every five or six rows to ensure planks remain firmly in place.



- Use 100-150 lb. roller to apply pressure to installed sections while the adhesive is still active (approximately 45-60 mins).



- Once the entire surface is covered, remove the guide planks and replace with flooring plank.
- Remove the expansion spacer to install molding to cover the expansion joint.



- Completed installation with moldings.

Important: During Installation, immediately wipe any adhesive from the floor surface using paint thinner and towels.