



## **Ecosolid Bamboo Flooring**

### **Installation Instructions Maintenance & Warranty**

**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**

**REV.20130814**

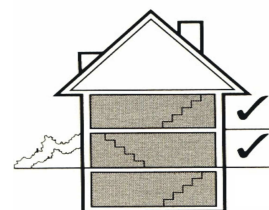
# Part I - INSTALLATION INSTRUCTIONS

## Product Description

Our Ecosolid bamboo 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

Grade Type	Nail Down	Glue Down	Float
Above Grade	Yes	Yes	No
On Grade	Yes	Yes	No
Below Grade	No	No	No



Sub-floor Type	Nail Down	Glue Down	Floating
Concrete	No	Yes	No
Plywood & OSB	Yes	Yes	No
Old wooden floor & other non-wood sub-floor	Site Specific	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 Flooring Installation Guidelines-Section V for moisture testing:

Concrete moisture readings are not to exceed 4.5% on Tramex Concrete Moisture Encounter meter.

Calcium Chloride Test is not to exceed 1.4kg. per 100 square meter in 24 hours.

\*\*\* Plywood must be CDX-rated at least 18mm thick. OSB must be 18mm, 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 planks 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 flooring delivery regardless of the season to remove residual moisture in the subfloor. The floor surface must never be warmer than 29.5<sup>0</sup>C or colder than 10<sup>0</sup>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<sup>0</sup> or 90<sup>0</sup> 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.
6. Before starting installation, cut the bottom moldings around door frames to insert the floor planks underneath. Expansion joint is necessary to allow the bamboo flooring to react to changes in ambient humidity. The expansion joint will be hidden by 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:

- The jobsite is properly enclosed, with all doors and windows installed.
- Concrete, plaster, paint and the subfloor are completely dry.
- The heating or ventilation system is working properly and that the conditions inside your home have been kept at an approximate temperature of 20<sup>0</sup>C and a relative humidity of 35% to 50% for at least two weeks.
- 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 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 bamboo 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 color and grain variation, and ensure planks can be arranged to reflect a homogenous floor covering.

Please advise your dealer immediately if any problems occur; installation team could be contracted to take over the installation if required. To avoid any variation in internal bamboo 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 18 mm OSB or plywood on joists spaced no more than 450 mm apart, center-to-center. OSB or plywood must be structurally sound.

### **Recommended tools**

1. Moisture Meter
2. Flooring Cleat-Nailer (L-cleats only)
3. Chalk reel
4. Tape measure
5. Hammer
6. Pull bar
7. Knocking block
8. Electric Drill
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

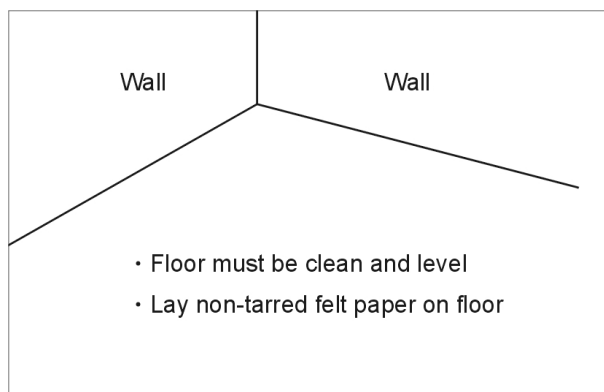
## Preparing and Leveling the Subfloor:

- 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.
- The subfloor surface must be level. The difference in level must not exceed 5 mm over a distance of 1830 mm. Eliminate small surface irregularities with a sander or floor leveler.
- The surface must be clean. Remove glue residue and staples, and drive in protruding nails.
- Remove debris and dust with a broom or vacuum.
- 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 75mm to 100mm. Drive in staples.

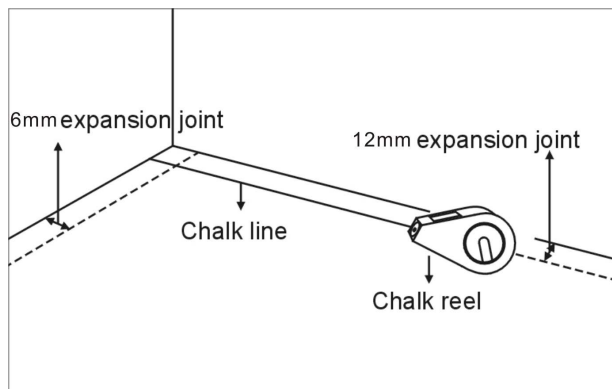
## Using the Nailer:

- Practice using the floor nailer on a scrap plank. Follow the safety tips and instructions of the nailer manufacturer.
- Clean the nail base plate regularly to ensure it does not damage the finish.
- If you are using a pneumatic nailer, adjust the compressor air pressure for the hardness of the species and to insure proper nail placement in tongue (about 80-90 psi). Follow the safety tips and instructions of the nailer manufacturer.

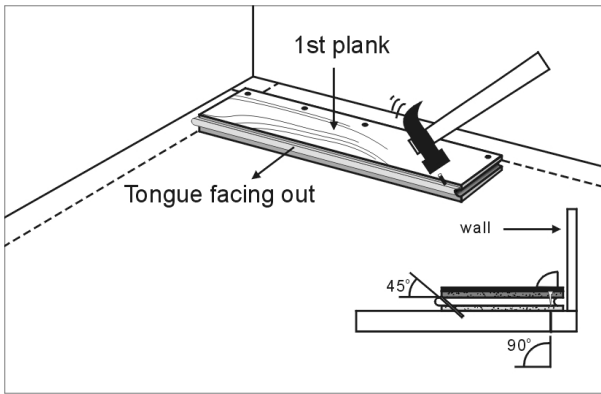
## Nail Down Installation Steps



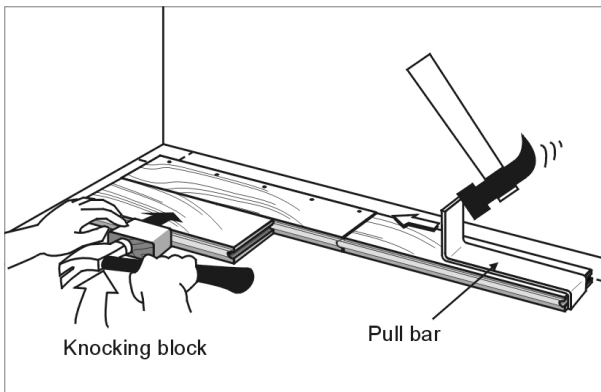
- Lay 7.2kg non-tarred felt paper or equivalent (with 75mm to 100mm overlapping end) in the direction of the boards using staples. This will reduce the normal mechanical friction between materials and facilitate installation.
- Felt paper is not required if floor has acoustic membrane.



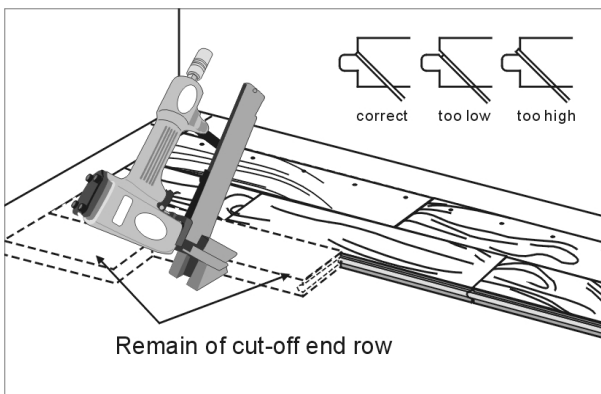
- Use chalk line to trace starting line with 12mm expansion joint at the side and 6mm at row end.
- Lay out 4 to 5 rows of planks ahead of time that match in terms of joints and color.
- Cut out imperfections planks or place them in less visible areas



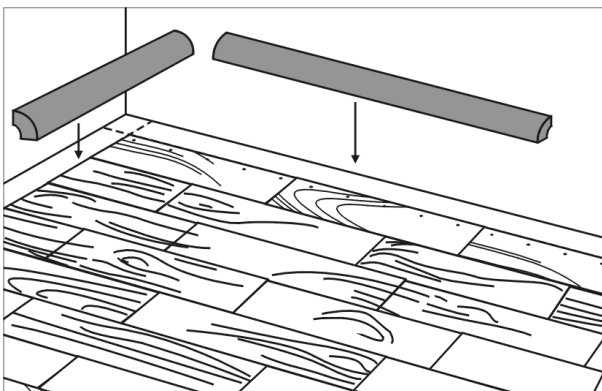
- Install the 1<sup>st</sup> plank along the starting line with the tongue facing out and groove facing the wall.
- 1<sup>st</sup> row must be hand-nailed. Drill holes at a 90° angle on the surface of the plank. Drive nails head in with a nail driver. Then drill holes at a 45° angle in the tongue and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



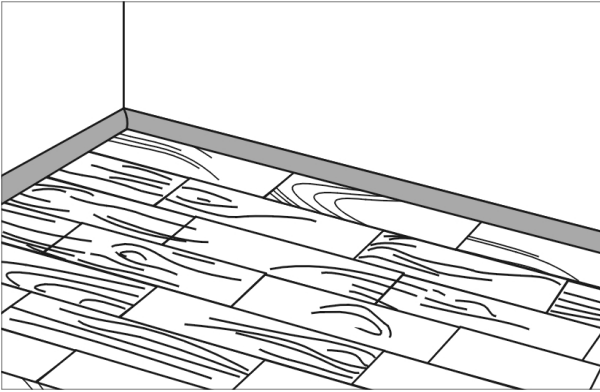
- Cut plank to fit end row, allowing for 6mm expansion gap and fasten with pull bar.
- Start subsequent row using the remainder of the cut-off end plank from previous row. The remainder should be at least 150mm. Fasten with knocking block at the side.



- Use manual or pneumatic nailer for subsequent rows. Each plank should be nailed every 150mm. Fasten each plank with at least 2-nails. Do not nail less than 50mm from plank end to prevent the tongue from splitting.
- For best results, stagger the joints 150mm to 200mm from the previous row and alternate lengths.



- The final planks should be installed the same way as the 1<sup>st</sup> plank.
- You may have to rip the last row lengthwise to leave a 12mm for expansion joint.



- Completed installation with moldings.

## **Glue Down Installation**

Our Ecosolid bamboo 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**

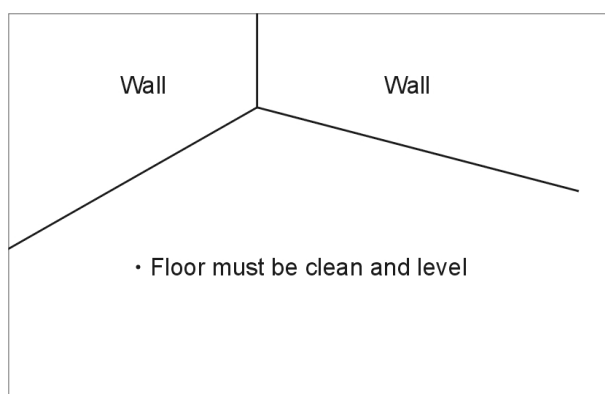
1. Moisture Meter
2. Bostik BEST or equivalent moisture-cured urethane adhesive
3. Bostik MVP moisture barrier (if required)
4. Notched Trowel-- follow Glue Manufacturer's guidelines for recommended size
5. Bostik Ultimate Adhesive remover or wipes
6. Guide Strip
7. Chalk reel
8. Tape measure
9. Hammer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

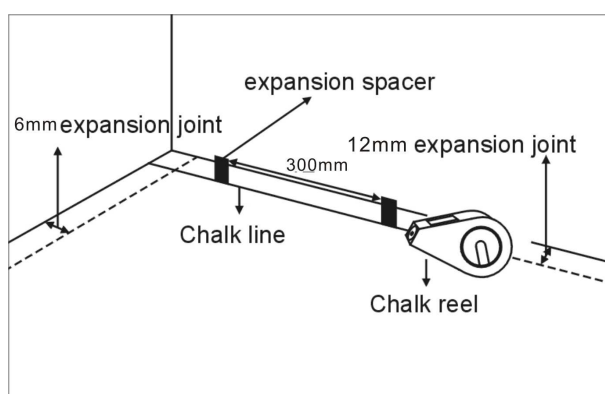
### **Preparing and leveling the sub-floor:**

- 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.
- The sub-floor must be level, i.e., a slope of no more than 5 mm over 3048 mm.
- The surface must be clean and free of debris and contaminants such as wax, paint, grease, dust, oil, nails, staples, etc
- For concrete installation, ensure that the concrete is not low-density (below 3000 psi) or friable.

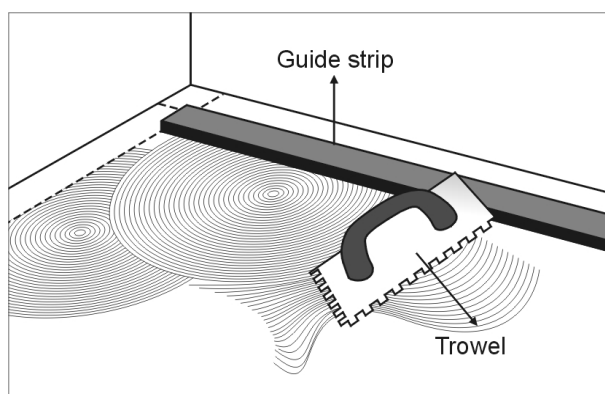
## Glue Down Installation Steps



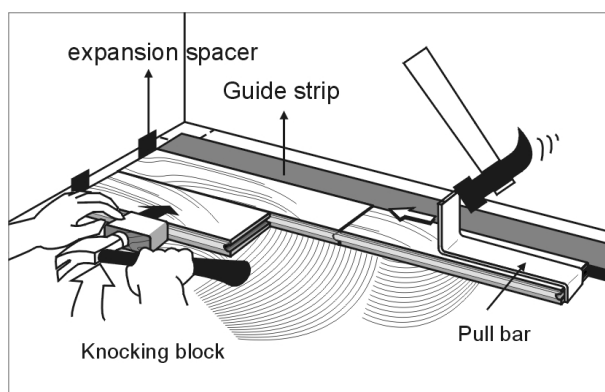
- The sub-floor should be free from any surface defect. If it is not, fill gaps with cement or sand.
- Lay out 4 to 5 rows of planks ahead of time that match in terms of joints and color.
- Cut out imperfections planks or place them in less visible areas.
- For concrete installation, ensure concrete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



- Use chalk line to trace starting line with 12mm expansion joint at the side and 6mm at row end.
- Nail the guide planks along the starting line. The plank will serve as a guide for the 1<sup>st</sup> row of plank.
- Width of the guide plank will be the same as the width of the flooring you choose.

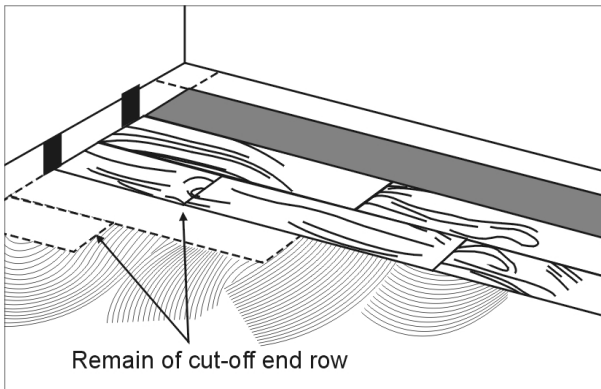


- Use the trowel and apply adhesive at a 45° angle from the starting line outward.
- Install the first plank along the guide strip with tongue facing you and the groove facing the starting wall.

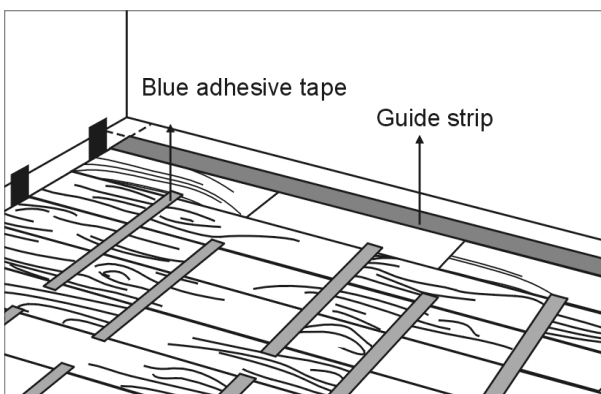


- Proceed from left to right to install other planks in the rows.
- Do small sections to ensure adhesive does not dry before the planks are laid.
- Use knocking block and pull bar to fasten the joint.

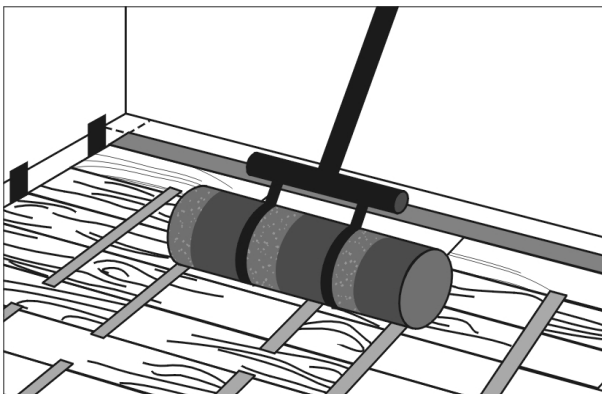




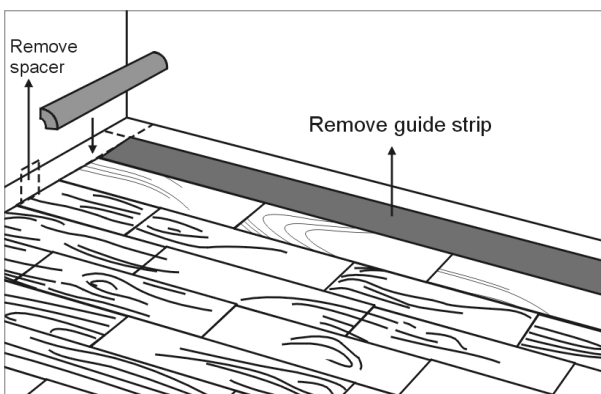
- Start subsequent row using the remainder of the cut-off end plank from previous row. The remainder should be at least 150mm.
- Insert the tongue end into the groove and lower the plank as close as possible to the adjacent one, avoiding contact with the adhesive as much as possible.



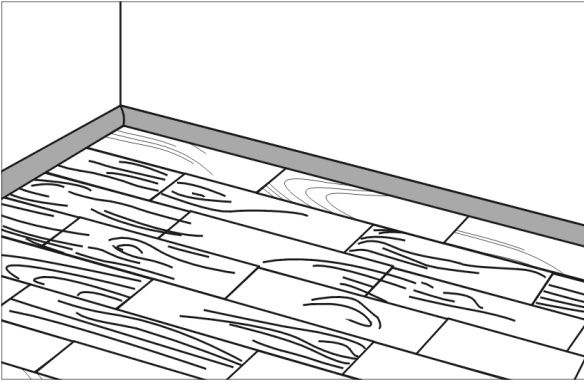
- Use blue adhesive tape every five or six rows to ensure planks remain firmly in place.



- Use 45-70kg 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.*

## Part II - MAINTENANCE & CARE

### Finishing & Maintenance:

You can hide the small holes left by finishing nails with putty.

1. Fill the hole.
2. Wipe excess putty immediately with a clean cloth and cleaner.
3. Apply a thin coat of urethane to the clean surface of the putty.
4. Let it dry for about 1 hour.

### Regular Maintenance Steps:

1. Proper diluted oil(10~20%) for maintenance use.
2. Apply oil to panel in adequate amount allowing bamboo to mostly take in oil.
3. Given 15 minutes to absorb the oil.
4. Using sandpaper to polish surface to completely smooth. Notice that sanding must be done in the direction of bamboo fiber.
5. Wipe excess oil with paper tissue.
6. Let it dry for about 24 hours;

**Apply Wax quarterly or as freq as necessary depending on traffic.**

### Preventive Maintenance:

- Install floor protectors on all furniture legs, especially if the piece has the potential of moving on the floor. Make sure you use the correct size and pad thickness for the weight and size of the furniture.
- Clean and replace felt pads yearly or sooner if they are thinning out or damaged.
- Gritty sand and dirt are abrasive to floors. Use protective mats at doorways.

- Use rugs (non rubber-back) in high traffic areas such as at all exterior doors, in front of refrigerators, dishwashers and sinks.
- Keep floors clean and free of dirt & sand. Dust mop and/or vacuum as needed. Do not use a vacuum that has a beater bar, metal wheels, and/or metal or hard plastic attachments. It is best to use felt or fine brush attachments. Make sure plastic wheels are free of dirt prior to vacuuming.
- Wipe up spills immediately.
- NEVER clean your floor with water or cleaners that mix with water.
- NEVER clean your floors with excessive water.
- NEVER use furniture duster sprays on bamboo floors.
- NEVER use cleaners that contain oil soaps or surfactants.
- NEVER use a Sharp Steamer or any other type of steam cleaning machine on bamboo floors.
- Some types of high heel shoes may cause indentations in bamboo floors.
- All dogs, especially large dogs, will cause scratches and dents in bamboo floor.

## **Part III - WARRANTY**

### **Duty and Responsibility of Installer and Homeowner:**

Though the manufacturer conducts meticulous quality tests to ensure that the floor planks comply with the established criteria, installers must use discretion when choosing plank. Omit certain planks and/or place them in a less visible area or cut those with serious defects as needed, regardless of their origin. If the installers have doubts about the grade and finish or manufacturing quality and can neither place the planks in a less visible area nor eliminate the imperfection, they should not install them. Planks that have been installed are considered to have been accepted by the installer and homeowner. The manufacturer will decline any responsibility for failure to strictly follow all installation instructions and recommendations and / or the use of improper materials and tools.

**The warranty covers the bamboo flooring only. Labor and labor costs incurred by the buyer are excluded.**

### **Industrial Norms:**

Our resilient bamboo flooring planks are made of natural bamboo and, as with all natural materials, certain imperfection may or may not exist. Your purchase is subject to rigorous quality standards and complies with current bamboo flooring industry standards. These stipulate an accepted imperfection rate within 5% of the floor planks. This includes natural imperfections in the bamboo as well as manufacturing and grade selection defects.

**Only products with a defect rate above the acceptable 5% level will be replaced.**

**The warranty will not be applicable in cases of careless installation of the product or poor judgment on the part of the installers.**

**Labor and installation costs will not be covered when the warranty is in practice.**

### **Structural Warranty**

The manufacturer warrants that the resilient bamboo flooring wear layer will not wear-through in 30 years under normal residential traffic. This applies to structural manufacturing defects in lamination when used under normal residential traffic conditions. Proper job site pre-inspection, installation and maintenance procedures must be followed. Adhesion breakdown caused by moisture damage and/or water damage is not covered under this warranty. Resilient bamboo flooring, being a natural product, will constantly expand and contract over time. Properly installed floors may consequently experience some separation between planks; the planks are not covered under this warranty. This limited warranty extends only to the original purchaser(s) of this product for as long as they own their home and is not transferable.

### **Warranty Disclaimers and Exclusions:**

Color variations are natural due to character of the bamboo and exposure to sunlight. New and replacement planks may not match display samples or existing flooring.

Naturally occurring bamboo characteristics such as grain, color and knots are not considered defects.

Normal exposure to sunlight will result in changes in shades and colors. Variation of shades between covered and uncovered areas is common. This is not a product defect.

Rubber-backed rugs may cause finish discoloration.

Adhesion breakdown caused by moisture damage and/or water damage is not covered under this warranty.

Resilient bamboo flooring must only be used indoors. This warranty will not apply if the flooring is used in any outdoor application.

Resilient bamboo flooring must be properly maintained in accordance with the enclosed maintenance instructions. Any wear-through warranty must not have occurred as a result of improper maintenance, refinishing or accidents such as damages caused by scratching, impacting or cutting.

This warranty does not apply to water damage caused by flooding, standing water or hydrostatic pressure.

### **General Disclaimer:**

This warranty excludes indentations, scratches, stains or damages caused by negligence, fire, water, moisture, excessive heat or excessive dryness, erosion, pebbles, sand or other abrasives, pets, insects, high heeled shoes, weather conditions or natural disasters, color variations, naturally occurring bamboo characteristics, failure to follow the written installation and maintenance instructions, improper maintenance, insufficient protection, misuse or improper alterations of the original manufacturer's product.

This warranty does not cover natural product expansion and contraction through time resulting in separation between planks or damage due to exposure to excessive low or high humidity for a long period of time.

This warranty only applies to the purchase with legal proof. It does not cover downgraded or discounted purchase.

Any and all representatives, promises, warranties or statements by agents that differ in any manner from this terms of limited warranty shall be void and in no force, unless in written form and signed by a duly authorized party.

All claims shall be reviewed on whether the finding should be justified to be conducted by an independent flooring inspector. If the defect is due to other factors, a written reply shall be issued to the claimer together with reasons.

Should a third party inspector be required, the claimer will be required to make a payment for the inspection. The payment will be determined by the company of the independent inspector. The inspector will perform an on-site inspection and will provide a full report to both parties. The inspector must be licensed and certified in bamboo flooring inspection.

Should the report not be justified for claim, the case will be considered dissolved and the claimer will have to bear the cost of the inspection. If justification is claimable, the manufacturer will provide suggestions to the claimer to reach an agreement for reimbursement and settlement.

#### **Limitations on Liability:**

**Consumer exclusive remedy and manufacturer's sole liability on any claim, whether in tort, contract, or breach of warranty, shall be limited to the repair or replacement of the defective goods for the affected area only which are proven to manufacturer's satisfaction to be defective in manufacture or the refund of the applicable purchase price. In no event and for no cause whatsoever, including any breach or default by manufacturer, shall manufacturer have any other liability (including without limitation incidental or consequential damages) or any monetary liability to consumer in excess of the contract price or prices of the pertinent products in question. All charges should be submitted to the Customer Relations Department for evaluation and review.**