

## Installation Guidelines LOCn'FLOAT™

These installation instructions cover all LOCn'FLOAT™ versions of NADURRA® Bamboo Flooring installed as a floating floor system.

### ATTENTION! READ BEFORE INSTALLING

Please note that these guidelines are abbreviated. All information is provided as a courtesy to our clients and is meant to be understood as guidelines only. We recommend that only professional flooring installers are used to install NADURRA® bamboo flooring. The customer and/or installer are responsible for any and all decisions pertaining to how, where and when to install NADURRA® bamboo floors. For more detailed information on the installation of bamboo flooring, please contact the National Wood Flooring Association (NWFA) at 1-800-848-8824 or on the web at [nwfa.org](http://nwfa.org). Before you begin installation, carefully read the instructions from start to finish. 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 supplier immediately and arrange for replacement. NADURRA® is not responsible for floor failures due to inappropriate site conditions or installation methods.

**Variations:** Bamboo is a natural fibre and variations are to be expected. Carefully examine the flooring prior to installation for grade, colour, finish, and quality. Also check that the flooring received matches the order. NADURRA® is not responsible for providing extra cartons once an installer has begun opening and/or installing flooring from a shipped order. If the flooring is not acceptable or the amount of boxes is incorrect, contact the seller immediately before opening any more of the cartons. Colour, shade, dimension and gloss variations may occur from the original samples or within a batch of flooring. Check the entire batch and each piece of bamboo flooring before installing. NADURRA® is not responsible for the installation of material with visible defects, variances or derivations from what was ordered or expected. Installation of any NADURRA® product serves as acceptance of the quality and acceptability of that material.

**Acclimation:** As relative humidity varies in different parts of the country, acclimation of the flooring prior to installation is the most important precaution to take in order to insure a successful installation. Proper acclimation is necessary to adapt the moisture content of the flooring to the conditions of your environment. Improper acclimation can cause the floor to buckle and/or the boards to shrink or cup after installation.

**Keeping Records:** The Installer is to keep a record of installation date, product code and batch (from invoice or Packing Slip), site relative humidity, site temperature, product and subfloor moisture content and manufacturer of instruments used. The installer should keep a copy for themselves and leave a copy of this with the homeowner.

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### APPLICATION

Our LOCn'FLOAT™ planks can be installed over concrete, wood subfloors, particleboard and both ceramic or vinyl tiles. They can be installed in below, on and above-grade applications of residential settings like homes and condominiums.

Even though this product is suited as a “do it yourself” installation, **NADURRA®** recommends consulting or using an NWFA-certified wood flooring installer.

### HANDLING AND STORAGE

**NADURRA®** bamboo flooring has been kiln-dried to optimum moisture content for stability. Site installation conditions can have a major impact on the performance of your flooring.

#### ACCLIMATISATION

Do not ship or unload bamboo in the rain, snow, or other excessively humid conditions. Flooring should be stored in an enclosed building that is well ventilated and free of excess or low humidity. Bamboo should be stored in the room where it will be installed until the moisture content of the bamboo is within the optimum range (see below). Evenly distribute unopened boxes in a dry space leaving at least a 4” air space under the cartons to ensure all boxes can acclimate to job site temperature. Do not store boxes on uncovered concrete or other cementitious materials. Run the interior climate controls for at least 6 days to stabilise the environmental conditions prior to storage and installation. All plaster, painting, and plumbing work should be completed prior to installation. **Note: the solid version of the Composite™ LOCn'FLOAT bamboo flooring acclimation may progress slower than usual due to the extreme density and resin content. In very dry or very humid climates, proper acclimation may take several weeks or longer. Open one box and test planks for moisture content before proceeding with installation. If you cannot get the proper moisture content, call your distributor.**

**NADURRA®** Floors should be installed into environments with HVAC systems able to consistently maintain the optimum conditions requirements below. The temperature and humidity in the storage or acclimatisation room should be the same as the levels that will be sustained over the life of the floor. Permanent heat and humidity controls must be installed and operating during and after installation. Low humidity conditions, continual dry heat and/or excessive moisture will change the moisture content from the manufactured moisture content, which may cause buckling or shrinking of the floor and/or the locking mechanism to fail after installation.

It is important to note that gaps between boards and movement of the flooring will occur with seasonal fluctuations in relative humidity and temperature. This cannot be avoided and is a natural effect. Bamboo is a natural product that fluctuates in size and moisture content as its environment changes.

Always moisture test the bamboo flooring before installing. It is suggested to use a pinless meter when moisture testing Composite bamboo. Pin type meters can give misleading readings because of the product's resin content interfering with electrical conductivity. Use the moisture meter manufacturer's recommended settings for Strand bamboo flooring. The Installer is to keep a record of installation date, product code and batch (from invoice or Packing Slip), site relative humidity, site temperature, product and subfloor moisture content and manufacturer of instruments used. The installer should keep a copy for themselves and leave a copy of this with the homeowner.

#### CONDITION REQUIREMENTS:

<b>Temperature Range:</b>	60-80°F   16-26°C
<b>Relative Humidity Range:</b>	40-55% (no greater than 15% difference between high and low). Humidity levels outside this range will void this warranty and may result in movement in the flooring, cupping, buckling, cracking, splitting, surface checking, warping, separation of the slats or strands and separation from the subfloor.
<b>Moisture Content:</b>	Flooring with moisture content greater than 2% outside the optimum moisture content of 6-10 % should not be installed.

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### SUBFLOOR PREPARATION

A moisture barrier such as 6 mil polyethylene film should be placed in crawl spaces. It is the responsibility of the installer and the owner to decide whether a subfloor surface is acceptable. Take the appropriate actions to ensure that the subfloor is clean, flat, dry, sound, and free of abrupt highs and lows. High spots should be ground down and low spots equal to or greater than 3/16" over 10' should be filled in with a proper levelling compound that is non-compressible. The subfloor must be free of dirt, wax, oil, paint, curing agents, and other foreign material that would interfere with installation. Wood subfloors must have no flex. **Warning:** The lack of moisture protection before installation can significantly reduce flooring performance. Wood subfloors must have no flex. Fix any squeaks or movement in the sub-flooring surfaces prior to installation.

#### CONDITION REQUIREMENTS:

**Flatness Tolerance:** 3/16" over a 10' radius

#### WOOD SUBFLOORS

Cover the entire wood subfloor with a vapour retarder or equivalent with a perm rating between .7 and 1. Use a minimum 5/8" (16 mm) T&G CD Exposure 1 plywood for 12" and 16" on center floors (OC), 3/4" T&G CD Exposure 1 plywood for 16" to 19" OC floors, and 7/8" T&G CD Exposure 1 plywood for 24" OC floors. A sub-floor of 1-1/8" plywood over joists at 16" on center is recommended for an optimal installation. If using OSB, do not use any board thinner than 3/4".

**Note:** Hardboard, particleboard, and chipboard are not recommended as subfloor material because they are prone to moisture damage and/ or lack of rigidity. Moisture Content of the subfloor must not exceed  $\pm 2\%$  difference between the subfloor and the flooring. When securing plywood to concrete use at least 9 nails (shots) per 4' x 8' plywood sheet. In areas with higher humidity, more nailing may be required. A 1/8" spacing should be left between each sheet of plywood at the ends and 1/4" at the edges.

#### TIPS:

- Adequately securing the subfloor is important; good nailing or screwing prevents creeping caused by shrinkage of lumber as well as irritating floor squeaks.
- Avoid using latex-containing levelling compounds.

#### CONCRETE SUBFLOORS

Use an appropriate liquid or trowel-applied moisture barrier membrane/adhesive system. Impermeable moisture barrier/vapor retarder systems with a perm rating less than or equal to .13 are suggested. Concrete or leveling compound must be cured a minimum of 60 days. Prior to installation the concrete must be tested for moisture according to the NWFA's guidelines. Test the concrete in more than one place for consistent readings. **NADURRA**® recommends: the Calcium Chloride Test Method (no more than 3 lbs per 1000 sq.ft in 24 hrs); or the In Situ Relative Humidity Probe test (no more than 75%). If the moisture content is higher than recommended, do not install the flooring. Appropriate measures must be taken to dry the floor. Remember, a concrete slab on/below grade that measures dry today may become moist in the future due to rising groundwater. Installation of a proper moisture barrier should be completed. **NADURRA**® is not responsible for site related moisture issues.

Concrete should be checked for flatness prior to installation and any low spots or voids should be filled to a minimum of 3/16" over a 10' radius. High spots should be ground down to flat.

Ceramic Tile, resilient tile and sheet vinyl must be well-bonded to subfloor, in good condition, clean and flat. Do not sand existing vinyl floors, as they may contain asbestos.

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### RADIANT HEATING SYSTEMS

NADURRA® LOCn'FLOAT™ Collection bamboo floors are compatible with radiant floor heating. Floors are warranted over hydronic in-floor heating only. Electric in-floor heating due to its tendency to produce dry heat is not warranted. As well, flooring installed in commercial multi-unit residential projects and commercial project where the water temperature is not controlled separately in each unit, is not warranted. The floors are only warranted over radiant in-floor heating under these conditions: with the purchase of the extended radiant floor heat warranty (please contact your seller for details); and by following the full NADURRA™ Installation Guidelines, the NADURRA™ Radiant Floor Heating Guidelines and the NADURRA™ Care and Maintenance procedures.

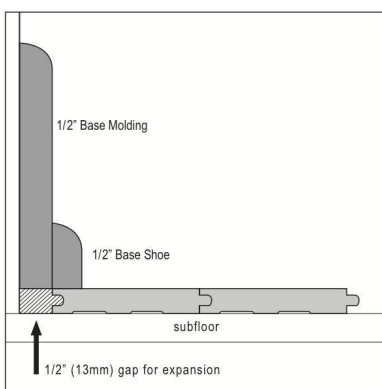
## INSTALLATION

### PREPARATION

NADURRA® bamboo flooring can be installed using the same methods used by flooring professionals when installing locking-together engineered hardwood flooring products. Please refer to the Hardwood Flooring Manual produced by the NWFA before installation. NADURRA® bamboo is supplied in fixed lengths and packaged in cardboard boxes. Like wood, bamboo has natural appearance variations requiring some extra allowance for on-site pre-selection, organising and cutting. NADURRA suggests over-ordering by 5-10%. Planks should be laid out on the floor before installation to allow for visual selection. As with all plank floors, careful selection and placement of joints, colour and grain matched pieces will enhance the visual effect. It also allows you the opportunity to select out very dark/light pieces for use in hidden areas in order to create a more uniform floor. Should an individual plank be questionable as to appearance or dimension the installer should not use this piece. Once a flooring plank is installed it is considered to have been accepted and of good quality. Correction of defect with the use of filler, wood putty or stain should be considered normal.

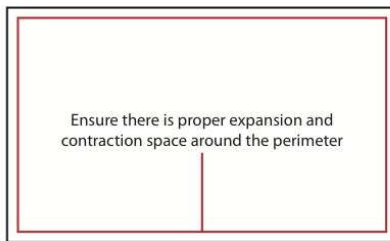
Flooring should be one of the last items installed in a project. In order to protect the floors while other trades are finishing their work prior to final cleanup and turnover to the owner, use rosin paper and only use 3M® 2080 Blue Tape to hold the rosin paper to the floor (other blue tapes may damage the finish). Do not apply tape to a floor that has been wiped with a solvent and never leave the tape on a finished floor surface longer than an hour. 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 build-ups.

**IMPORTANT:** Depending if you can maintain a constant year-round relative humidity and temperature or not (see acceptable ranges above), leave 1/2" to 5/8" expansion and 1/2" to 5/8" contraction gaps at all walls and vertical obstructions. Bamboo expands and contracts along its length as well as its width so it is critical to leave expansion and contraction spaces around the entire perimeter of the room. Along the wall, line the flooring edge up exactly between a combination of a base moulding and base shoe moulding to give enough covered space to create both an expansion and contraction gap. See the diagram below. The floor must not strike the wall if it expands and should not show beyond the mouldings if it shrinks. Undercutting the drywall may be an option to create the expansion space if only one of the wall mouldings is being used.

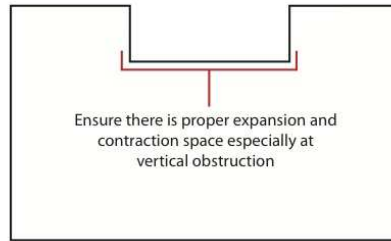


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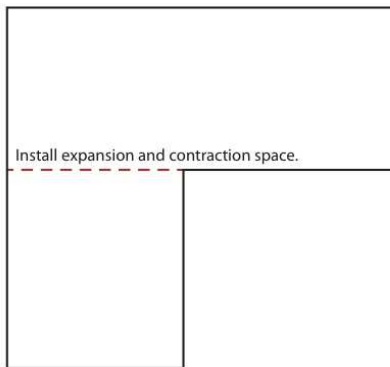
In rooms that are not square or rectangle (such as a T, L, F, or U shaped room), between rooms and hallways, and in narrow areas bridging two larger flooring expanses, stress on the locking mechanism from each separate area can cause the planks to pull apart, especially if the environmental conditions are or pre-installation moisture content of the flooring was outside the optimum ranges. In these cases leave an expansion space, that may be covered by a transition such as a T-moulding or low profile metal transition. If the expansion space is not desired, consider installing a Tongue and Groove flooring with the more traditional nail-down or glue-down methods.



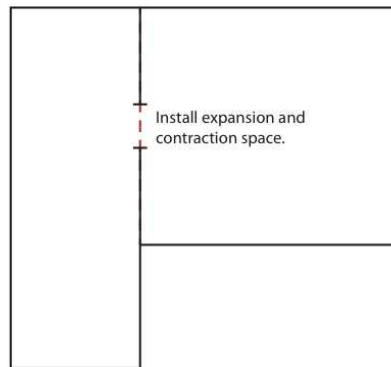
Rectangle or Square Room



Rectangle or Square Room with obstruction (fireplace, chimney, etc.)



T, L, F, or U Shaped Room



Two Adjoining Rooms Or Adjoining Hallway And Room

For spaces wider than 20' (boards running the length of room), installers may need to build-in additional expansion and contraction spacing at the edge of room. For spaces larger than 40' wide an expansion joint in the middle of the room should be created, such as that provided by a T-Moulding, low profile metal transition or spacers. Place the expansion joint every 32' or so.

Under no circumstances should the floor's ability to move freely be restricted. Transition pieces, quarter round and baseboard should be installed so the flooring can float freely underneath their overlap portion. Cut off tongue of flooring if needed to allow for free movement. Do not install cabinets or walls on top of the floating floor.

### TIPS:

- Suggested tools: table saw, chop saw, tape measure, moisture meter, chalk line, painters tape, rubber mallet, hammer, tapping block, pry bar, wedges, 6mm polyethylene vapour barrier, floating floor padding underlayment or 2-in-1 floating floor padding / moisture barrier underlayment not exceeding 1/8" in thickness, spacers.
- When selecting planks to install, always have 3-4 boxes open at a time to select from.
- Correction of defects with the use of filler, wood putty or stain should be considered normal.
- Do not install cabinets or walls on top of floating floors.

## Installation Guidelines LOCn'FLOAT™

### UNDERLAYMENT INSTALLATION

A moisture barrier must be used in all installations. Install a 6 mil polyethylene vapour barrier (or equivalent) over the entire subfloor surface. Overlap polyethylene sheets by 16" and then tape together, creating an airtight seal. Use also a floating floor padding underlayment or a 2-in-1 floating floor padding / moisture barrier underlayment or a 3-in-1 floating floor padding / moisture barrier / sound barrier underlayment over entire surface of subfloor. NADURRA's 1/16" thick 3-in-1 underlayment is recommended. Underlayment padding should not be thicker than 1/8". If there is too much movement in the flooring due to an excessively cushy underlayment or flex in the subfloor, the locking mechanisms on the planks can be damaged. Run padding up walls 1-1/2" and secure in place with tape. Join padding sections to one-another with tape. Follow the underlayment manufacturer's specific installation instructions for best results. Cut back to hide padding when installation is complete.

### FLOATING FLOOR INSTALLATION

Run the flooring along the longest dimension of the room. Measure the width of the room – perpendicular to the direction you are installing the flooring. The last row should be no less than 1-1/2" wide. If it is less, rip-saw the starter row narrower. Lay your starter row with the groove end facing the room. 1/2" to 5/8" expansion and contraction spaces should be left around the perimeter of the room using spacers to maintain the gap. Click the end joints of the boards together by pressing the second plank into the first at an angle. Make sure there are no gaps between the ends of the two planks.

#### **WARNING:**

- All boards must be tapped on the sides and the ends to secure the lock (even if boards appear to be tight, the lock may not be secured).
- Tap boards gently and repeatedly. Do not attempt to secure the lock with one hit. A Unilin tapping block should be used. Do not hammer directly on to the side of the plank or you may ruin its locking mechanism.

Start the second row (and all successive rows) with a piece of flooring at least 6" shorter or longer than the first row, so the end joints stagger at least 6". When clicking the second row (and all successive rows) into the first, position the long side of the panel to be installed at an angle to the panel already installed. Move the panel gently up and down and gently exert forward pressure. The panels will click into place. The use of a tapping block may be necessary to completely tighten the joint.



To install the end joints of the second row (and all successive rows) lift the end of the first plank installed with a wedge. Insert the end of the next plank as above. Lower the plank until it is completely parallel to the ground with the long edge of the plank resting on the edge of the first row's locking mechanism. Rest the end of this plank on a wedge. Now both this plank and the first plank of this row will be at the same angle to the first row's locking mechanism. Press the long edge of the plank being installed into the locking mechanism of the first row with enough force and up and down motion for the locking mechanisms to engage. Use a tapping block if needed to ensure the locking mechanisms are as tight as they can be. When completely inserted, press the plank being installed down on to the subfloor firmly. Make sure there are no gaps at the end and long edge joints.

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Now lift up the newly installed plank with a wedge and begin the process again with the next plank to be installed. Use as many wedges as is needed to install the entire row. Remember to keep your ½" spacers in place around the perimeter of the room. For the final rows near the wall use your pry bar to pull the plank joints tightly together.

A video showing the proper installation method of locking systems may be viewed here:  
<http://www.valinge.se/products/products.lasso?id=1003667840> View the "2G/2G" movie.

#### TIPS:

- check that doors can still open after installing the flooring and underlayment

#### 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). Note: do not allow the tape to remain on the floor longer than one hour. And do not apply tape to flooring that has been wiped with a solvent at any stage of the installation process. Clean the floor thoroughly before laying the rosin paper to ensure that no debris is trapped underneath. Buff the floor with lamb's wool pads in order to remove any loose splinters, residues or footprints. Do not use plastic film or other non-breathing coverings as this can cause the floor to become damaged from humidity build ups.

Remove expansion spacers and install accessories and baseboard or quarter round to cover expansion/contraction spaces.

Place walk off mats at all entrances to help collect dirt and debris that could damage or dull the flooring finishes. Install felt protectors underneath all furniture.