

INSTALLATION GUIDELINES

Portfolio



FINE BAMBOO FLOORING, PANELS & WORKTOPS

Teragren Flooring Systems featuring the Välinge-patented Modified 2G Fold-Down self-locking system

Important Product Line Notes:

- Check Teragren.com for the latest updates to our Installation Guidelines
- Teragren Välinge Modified 2G Fold-Down Bamboo Flooring systems are suitable for installation as a floating floor system above, on, and below grade.
- Acclimation: Teragren Bamboo Flooring should be delivered to the job site no less than 72 hours prior to installation. Distribute unopened boxes evenly to ensure all boxes can acclimate to job site temperature. **DO NOT OPEN BOXES PRIOR TO INSTALLATION.** Floor packaging should only be opened once installation is ready to begin.
- NOTE: Do not install cabinets or walls on top of the floating floor.
- Always install transition pieces between rooms etc. to allow unique spaces to expand and contract in an unrestricted manner.
- Ensure flooring is installed in such a manner as to allow for up to 1/2" expansion or contraction around any fixed wall or object.
- Bamboo Flooring may be installed over radiant floor heating systems (see "Radiant Floors" section below). Surface Temperature of flooring should never exceed 85° F.
- The use of a Vapor Barrier (over cementitious materials) or Vapor Retarder (over wood) is mandatory.
- Installer to document installation date, product run code (off box ends), flooring moisture content, site relative humidity, site temperature, and subfloor moisture content. This information should be retained by the installer and left with the property owner as a permanent record.

Pre-Installation Notes:

Please read Teragren LLC's warranty, maintenance instructions, and ALL of the following guidelines before opening any packaging or beginning your flooring installation. All information within this document is provided as a courtesy to our customers and is meant to be understood as an installation guideline only. The customer and/or the installer is solely responsible for any and all decisions regarding how, where, and when to install any Teragren product.

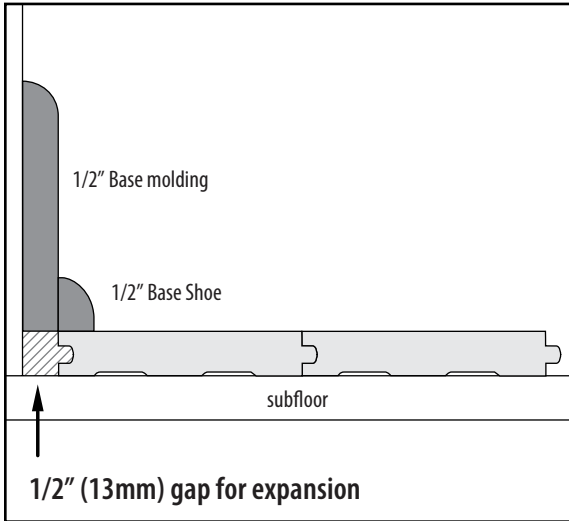
Teragren LLC recommends using the services of a professional hardwood flooring installer. For more information and for guidelines on the installation of hardwood flooring, please contact the National Wood Flooring Association or review their website <http://www.woodfloors.org>.

Because bamboo is a natural fiber, it is not uncommon for natural variations in color to occur within and between individual flooring planks. Teragren'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, all material must be inspected to ensure the material received matches the work order. Any visible defects or discrepancies should immediately be reported to your distributor or dealer. It is considered the installer/owner's responsibility not to install flooring having finish, manufacturing, or unacceptable material variations. Individual planks with defects should not be installed or the defect should be cut-out prior to installation. Filler or putty sticks may be used to correct minor flooring defects during installation. The Teragren warranty does not cover materials with visible defects once they are installed. **Installation of any Teragren product serves as acceptance of that material.**

NOTE: Unexpected changes to subfloor moisture content or changes to Relative Humidity outside of the approved range of 35-55% may cause bamboo flooring to gap, cup, buckle, or otherwise dimensionally change. Bamboo Flooring must be installed into a relative humidity controlled environment over a moisture barrier or vapor retarder (see Sub-Floors section below) per the following specifications:

- Concrete Subfloors: Impermeable moisture barrier systems with a perm rating less than or equal to .13 are suggested.
- Wood Subfloors: Use a UU-B-790a, Grade B, Type 1, Style 1a permeable vapor retarder or equivalent with a perm rating between .7 and 1



NOTE: Flooring must be installed in such a manner to allow for up to 1/2" expansion and 1/2" contraction of your installed flooring. Bamboo, like all hardwoods, expands and contracts as its moisture content rises and falls.

Use a combination of wall moldings such as a base-molding and base-shoe together to ensure that the edge of the installed flooring does not strike the wall if it expands and does not show if the flooring shrinks.

It is 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 Teragren flooring and accessories. Teragren LLC makes no warranty or guarantee of the quality of the chosen installer's work or of a particular installation performed by the installer. Teragren LLC disclaims all liability for any errors or improprieties in the installation of its products.

Product Acclimation:

Do not remove from packaging prior to or during acclimation. Stack or distribute boxes in such a manner to allow for complete and even air-circulation around the boxed flooring.

Acclimation should occur at the room temperature expected to be present before, during, and after installation. For maximum material stability, Bamboo Flooring must be installed into environments with relative humidity (RH) and temperature controls capable of maintaining the delivered moisture content of 7-9%. Please reference the following chart for correlations between RH, Temperature, and moisture content (%):

*** Relative Humidity levels required to maintain below moisture content:**

RH		5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%
° F	° C	Moisture content (%) of wood at above relative humidity values:																		
30°	-1.1°	1.4	2.6	3.7	4.6	5.5	6.3	7.1	7.9	8.7	9.5	10.4	11.3	12.4	13.5	14.9	16.5	18.5	21.0	24.3
40°	4.4°	1.4	2.6	3.7	4.6	5.5	6.3	7.1	7.9	8.7	9.5	10.4	11.3	12.3	13.5	14.9	16.5	18.5	21.0	24.3
50°	10.0°	1.4	2.6	3.6	4.6	5.5	6.3	7.1	7.9	8.7	9.5	10.3	11.2	12.3	13.4	14.8	16.4	18.4	20.9	24.3
60°	15.6°	1.3	2.5	3.6	4.6	5.4	6.2	7.0	7.8	8.6	9.4	10.2	11.1	12.1	13.3	14.6	16.2	18.2	20.7	24.1
70°	21.1°	1.3	2.5	3.5	4.5	5.4	6.2	6.9	7.7	8.5	9.2	10.1	11.0	12.0	13.1	14.4	16.0	17.9	20.5	23.9
80°	26.7°	1.3	2.4	3.5	4.4	5.3	6.1	6.8	7.6	8.3	9.1	9.9	10.8	11.7	12.9	14.2	15.7	17.7	20.2	23.6
90°	32.2°	1.2	2.3	3.4	4.3	5.1	5.9	6.7	7.4	8.1	8.9	9.7	10.5	11.5	12.6	13.9	15.4	17.3	19.8	23.3
100°	37.8°	1.2	2.3	3.3	4.2	5.0	5.8	6.5	7.2	7.9	8.7	9.5	10.3	11.2	12.3	13.6	15.1	17.0	19.5	22.9
110°	43.3°	1.1	2.2	3.2	4.0	4.9	5.6	6.3	7.0	7.7	8.4	9.2	10.0	11.0	12.0	13.2	14.7	16.6	19.1	22.4
120°	48.9°	1.1	2.1	3.0	3.9	4.7	5.4	6.1	6.8	7.5	8.2	8.9	9.7	10.6	11.7	12.9	14.4	16.2	18.6	22.0

From the U.S. Dept. of Agriculture "Wood Handbook — Wood as an Engineering Material" Section 3-7

Tools Recommended (not all tools may be required):

Rubber mallet, tapping block (tested to ensure it won't damage planks), tape measure, chalk line, pencil, carpenter square, scribing block, flat bar, 1/2" (13mm) wedges, saw, chop saw, moisture barrier (for crawl spaces), moisture barrier or vapor retarder (depending on subfloor material), underlayment (floating floor approved underlayment or cork not exceeding 5/64" (2mm) in thickness may be used).

Sub-Floor Examination and Preparation:

A moisture barrier such as 6 mil polyethylene film should be placed in crawl spaces. Wood sub-flooring surfaces must have no flex and must be smooth, level, clean, dry, and free of contaminants. Fix any squeaks or movement in the sub-floor prior to installation. High spots should be sanded flat. Any low spots equal to or greater than 5/64" (2mm) over 78" (1.98 meter) should be filled (brought to level) using a non-compressible material. Suitable surfaces may include concrete, particleboard, wood floors, and both

ceramic and vinyl tiles, among others. Please consult with your professional flooring installer to determine suitability of sub-floor surface.

Floating Floor Installation:

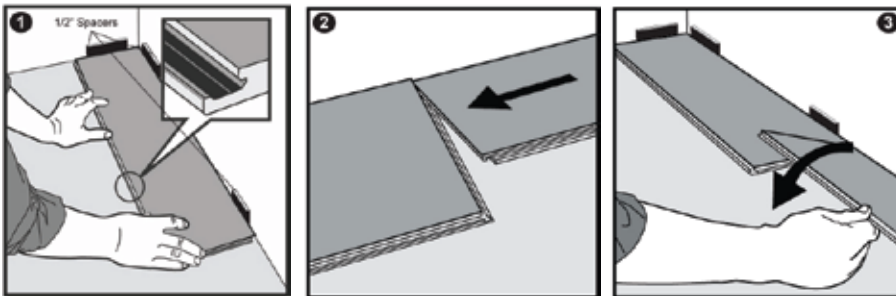
Install a moisture barrier or vapor retarder over the entire subfloor surface following closely the manufacturer's recommendations. Next, roll out 5/64" (2mm) padding (underlayment) one roll at a time over the moisture barrier or vapor retarder, being careful not to poke holes through or damage either material during installation. Run padding up walls 1" to 1-1/2" (25.4 to 38.1mm) and secure in place with tape. Join padding sections to one-another with tape. Make sure to tape down all loose edges. Other approved floating floor underlayment materials such as cork may be used. Follow underlayment manufacturer's installation instructions. Note: flexible underlayment should not exceed 5/64" (2mm) in thickness.

Note: The use of an underlayment or padding thicker than 5/64" (2mm) may result in plank movement causing damage to the flooring and/or friction induced noise such as "creaking" or "squeaking".

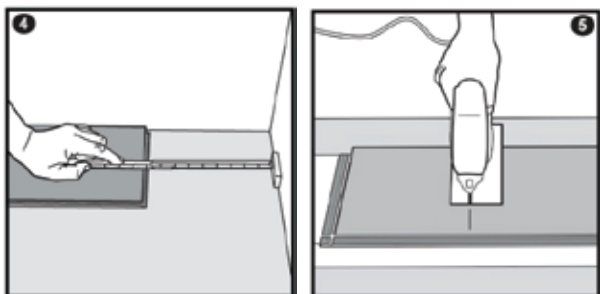
Measure the room so that the quantity of flooring required is known (length x width = square feet). If the last board required is too narrow in width, it may be necessary to install length-wise cut boards on both sides of the room to give it an overall balanced look. Ensure that the floor will fit under doors and skirting strips. Existing skirting strips may have to be removed during installation to allow for the expansion perimeter. Ideally, the flooring should be installed parallel to the longest dimension of the room. In a square room, the long joints should (preferably), follow the path of the incoming light. Allow for a minimum expansion space of 1/2" (13mm) around the perimeter of the installed flooring. For floors larger than 16' (4.87 meter) in any one direction, leave an additional expansion space of 1/8" (3.2mm) on the edges for each 48" (1.2 meter) of installed flooring. For example, a 24' (7.3 meter) square room would require about 3/4" (19mm) expansion on all sides. Rooms larger than 40' (12.2 meters) wide (boards running length of room) require an expansion joint in the middle of the room such as could be provided by leaving an intentional gap covered by a t-mold (or other flat molding) or other accessory piece. Any rooms that are not square (such as a T, L, F, or U shaped room) must have non-parallel areas separated by an expansion joint. All door opening must have an expansion joint between rooms. Under no circumstances should the floor's ability to move freely be restricted.

First Row:

Start in a corner of the room with the locking strip (lower edge of the lock) facing into the room (see picture #1). Using spacer wedges, maintain a 1/2" (13mm) gap between the wall and the edges of the planks being installed. Install the first plank. Install the second plank (see picture #2), pressing the short end of the second plank against the leading edge of the first plank and then, in one movement, laying it down flat (see picture #3) to engage the locking mechanism. Ensure that the edges of all planks being installed are parallel and even. Continue with this method until you are ready to install the last plank of the first row.

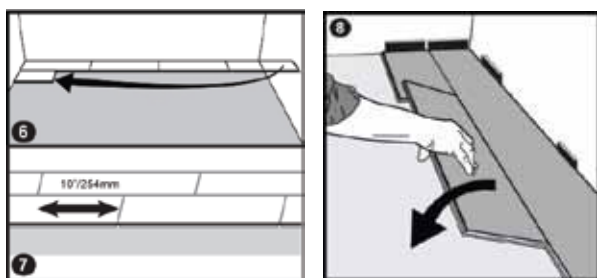


Carefully measure the required length of the last plank in the row, allowing for a minimum of a 1/2" (13mm) gap at the end of the row (see picture #4). Cut the last plank of the first row to size using a saw with a carbide blade (see picture #5), then install as done for the previous planks, leaving a 1/2" (13mm) gap at the end. After the first row is complete, ensure that all edges are perfectly even and parallel. Note: It is practical to fine-tune the gap between the long sides and the wall later, after the first three rows have been laid.



Second Row:

Start the second row beginning with (if available) the piece left over (cut off) from the first row (see picture #6 - piece must be at least 36" (91.4cm) in length). If the piece is too short (or if there is no leftover piece), start with a new board, cut in half. Always ensure that the end joints (between planks in adjacent rows) are staggered at least 10" (25.4cm) apart (see picture #7).



Maintaining a 1/2" (13mm) gap between the end of the plank (row 2 plank 1) and the wall using a 1/2" (13mm) spacer, begin the second row by inserting the long edge of the locking mechanism of the first plank (row 2 plank 1) into the long edge of the locking mechanism of the adjacent plank of the first row. Push the plank forward and press down at the same time to fully engage the locking mechanism (see picture #8). With the plank resting flat on the floor, ensure there is no gapping at the joint between it and a first row. If necessary, use a tapping block to ensure that the plank's locking mechanism is fully engaged and that there is no gap between it and the adjacent plank. To install the second plank (row 2 plank 2), place the long edge of the plank into the adjacent plank of the first row. Slide this plank to the left until the short end of the second plank is flush against the leading edge of the first plank (row 2 plank 1). Then, in one movement, lay the plank down flat, ensuring that there is no gapping on either the short end or the long side of the plank. Use a rubber mallet and tapping block to correct any gapping. Note: If gapping cannot be corrected by a rubber mallet and tapping block, ensure that there are no splinters or other obstructions keeping the locking mechanism from fully engaging.

Installation around pipes or columns:

Drill holes and saw out flooring as required to make room for any exposed structure or pipe. Note: holes around pipes or other items must be at least 3/4" (19mm) greater in diameter than the pipe or structure.

Installation with Transition pieces:

Flooring must be allowed to float freely underneath the overlap portion of the transition piece. To ensure freedom of movement, cut or chisel off tongue as required allowing unrestricted movement of the flooring under the transition piece.

Radiant Heat:

Teragren bamboo flooring is suitable for installation over radiant heating systems capable of maintaining a surface temperature at or below 85°F. When choosing an installer for application over radiant heat, look for members of the Radiant Panel Association. Please refer to www.radiantpanelassociation.org for more information on radiant heat systems.

Please note that the underlayment may insulate the heat slightly from transferring up through the floor and that rugs placed on a floor heated by a radiant source can increase the surface temperature of that floor by 2-3 degrees Fahrenheit. Before installing the flooring, activate the radiant heating system and leave it on for at least 21 days prior to installation. Radiant heating systems must be turned off 24 hours prior to and during flooring installation. The radiant heating system may be reactivated after the flooring installation is complete. Please refer to www.radiantpanelassociation.org for more information.

It is up to the owner/installer to confirm the suitability of any radiant-heating system for the intended end-use. The selection and use of any radiant heating system is at the sole discretion and responsibility of the owner/installer.

Maintenance Guidelines:

Teragren recommends vacuuming or sweeping in order to remove dirt and grit prior to cleaning the flooring. Remove any liquid spills promptly. Exposure to the sun and ultra-violet light can accelerate oxidation (color-change). Periodically rearrange rugs and furniture to allow for consistent 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. Teragren recommends using either WoodWise Floor Cleaner by Design Hardwood Products; 800.424.7092 or Bona Swedish Formula® Hardwood Floor Cleaner by BonaKemi USA, Inc. 800.574.4674. Use of some oil soaps or wax based cleaners may cause future difficulty when recoating flooring.

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

Basic Coatings TyKote® Dustfree Refinishing System www.BasicCoatings.com Toll-Free: 800. 441.1934
or BonaPrep™ Re-coating Adhesion System by BonaKemi USA www.bonakemi.com Toll-Free: 800.872.5515.

[Basic Coatings TyKote® Dustfree Refinishing System](#) (800.441.1934) or [BonaPrep™ Re-coating Adhesion System](#) by [BonaKemi USA](#) (800.872.5515).

Contact your Teragren distributor or retailer for more information or [email tech support](#).

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