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# INSTALLATION GUIDELINES

## VANTAGE II



Engineered wide-plank Xcora® flooring with High-Performance oil finish

### Important Product Line Notes:

- Check Teragren.com for the latest updates to our Installation Guidelines
- Vantage II flooring is suitable for installation as a floating system above, on, or below grade, or as a nail or glue-down system above or on grade.
- For maximum stability, acclimate in and install into environments with operating HVAC systems able to consistently maintain 35-55% Relative Humidity at 60-85° Fahrenheit
- Do not deliver or install flooring until the building has been enclosed with windows and doors, and all cement, plastering, and other "wet" work has been completed.
- Handle and unload flooring with care. Store in a dry place with at least a four-inch air space under cartons. Do not store boxes on uncovered concrete or other cementitious materials.
- Flooring must be delivered to the job site a minimum of 48 hours prior to installation. Flooring is acclimated when its moisture content no longer changes. Please see acclimation guidelines below.
- The use of vapor barriers (over cementitious subfloors) or vapor retarders (over wood subfloors) is mandatory.
- Ensure flooring is installed in such a manner to allow for up to 1/2" expansion or 1/2" contraction around walls or any other fixed object.
- Flooring may be installed over radiant floor heating systems (see "Radiant Floors" section below). Surface Temperature of flooring must never exceed 85° F.
- 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 must be retained by the installer and left with the property owner as a permanent record.

### Pre-Installation Notes:

Please read Teragren LLC's Vantage II 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. **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. Installation of any Teragren product serves as acceptance of that material.**

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 common 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 must 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 must not be installed or the defect must be cut-out prior to installation. Filler or putty stick may be used to correct minor flooring defects during installation. The Teragren warranty does not cover materials with visible defects once they are installed.

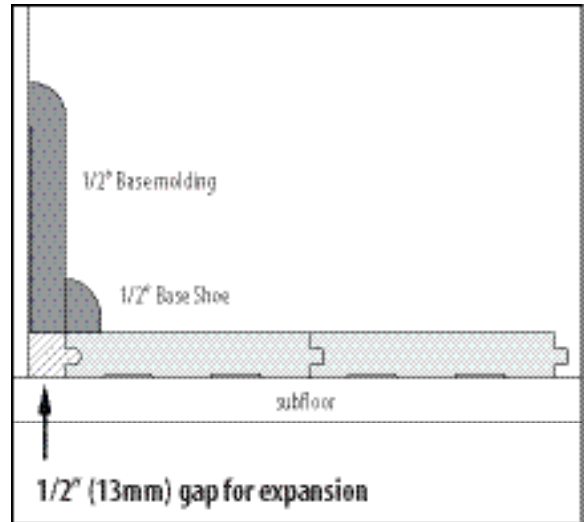
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**Vantage II flooring must be installed over a vapor barrier or vapor retarder per the following specifications:**

- **Concrete Subfloors:** Use an appropriate liquid or trowel-applied vapor barrier membrane/adhesive system. Impermeable vapor 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.



### Product Acclimation:

Teragren bamboo flooring must be installed over a vapor barrier or vapor retarder into environments with HVAC systems able to consistently maintain 35-55% Relative Humidity at 60-85° Fahrenheit. Environmental conditions outside of the recommended range will cause the moisture content of the flooring to decrease or increase and may cause excessive shrinking, swelling, checking, cupping, buckling, or other unintended dimensional change. Flooring must be delivered to the job site a minimum of 48 hours prior to installation. Note: Installation into non-compliant environments not capable of maintaining 35-55% relative humidity may require acclimation outside of the cardboard box and plastic wrapper. Flooring should be acclimated to the relative humidity and temperature in which the flooring will be permanently maintained. Flooring is acclimated when its moisture content no longer changes.

### Installation Method(s):

- Teragren Bamboo Vantage II flooring is suitable for installation as a floating system above, on, or below grade, or as a nail or glue-down system above or on grade.

### Tools Recommended (not all tools may be required):

**Nail or Staple Installation:** Hammer (1 lb.), tape measure, chalk line, pencil, carpenter square, scribing block, flat bar, 1/2" (12.5mm) wedges, saw, chop saw with 80 tooth carbide tipped blade, vapor retarder (wooden subfloor), pneumatic tongue & groove flooring nailer or manual nailer, 18 gauge 1.25-1.5" narrow crowned staples or flooring cleats (see appropriate section below).

**Glue-down Installation:** Hammer (1 lb), tape measure, chalk line, pencil, carpenter square, scribing block, flat bar, 1/2" wedges, saw, chop saw, premium wood flooring adhesive, low adhesive painter's tape, vapor barrier or vapor retarder (depending on sub-floor material)

**Floating Installation:** 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, vapor barrier (for crawl spaces), vapor barrier or vapor retarder (depending on subfloor material), underlayment (floating floor approved underlayment or cork not exceeding 1/8" (3mm) in thickness may be used).

### Sub-Floor Examination and Preparation:

A vapor barrier such as 6 mil polyethylene film must 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 flooring installation. The sub-floor surface must be level and smooth prior to flooring installation. Subfloors must be checked for flatness prior to installation and any low spots or voids must be filled to a minimum of 3/16" (4.76mm) within a 10' (3 meter) radius or 1/8" (3mm) in a 6' (1.8 meter) radius, and high spots ground to surface.

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Acceptable sub-floor specifications include 5/8" (16mm) T&G CD Exposure 1 plywood for 12" (30.5cm) and 16" (41cm) on center floors (OC), 3/4" (19mm) T&G CD Exposure 1 plywood for 16" (40.6cm) to 19" (48.3cm) OC floors, and 7/8" (22mm) T&G CD Exposure 1 plywood for 24" (61cm) OC floors. A sub-floor of 1-1/8" (28.5mm) plywood over joists at 16" (40.6cm) on center is recommended for an optimal installation. Note: the use of particleboard may result in a substandard subfloor due to the lack of rigidity and fastener-holding ability.

Concrete sub-floors MUST be tested for moisture in more than one place for consistent readings. Teragren recommends using a Calcium Chloride Test Method to quantify the volume of moisture vapor radiating from a concrete slab surface over time and / or a Relative Humidity Probe test to quantify the amount of relative humidity within the slab. The use of a Vapor Barrier (over cementitious materials) or a Vapor Retarder (over wood) is mandatory.

### Nail or Staple-Down Installations:

Install a vapor retarder. Installed flooring should be square with the space and perpendicular to the joists, leaving a 1/2" **expansion and 1/2" contraction** space from base plate or wall. Starter rows should be held firmly in place by wedging or blind nailing. Once starter rows are secure, additional rows should be blind nailed directly above the tongue at a 45-50 degree angle to the face of each plank. Fasteners should be spaced every 3-4" for staples or every 4-6" for cleats. Fasteners should not be placed closer than 2" (15cm) from the end of planks to prevent splitting of the tongue. When choosing a nail/staple gun, be certain the model is appropriate for the tongue & groove profiles so as not to damage the edge or surface of the flooring.

**Note:** Depending on the geographical area and interior climate control systems of the installation environment, to minimize expansion of nailed or glued-down floors that are wider than 20', installers may need to build-in additional spacing between planks and at the edge of rooms. Where additional spacing is required, use a removable spacer between every few rows of planks.

**The selection and use of any nailer is at the sole discretion and responsibility of the owner/installer.** For a list of nailers tested by their manufacturer(s) as being compatible with Teragren flooring products, please visit [http://www.teragren.com/downloads/Teragren\\_Adhesive\\_Guidelines.pdf](http://www.teragren.com/downloads/Teragren_Adhesive_Guidelines.pdf).

### Glue-Down Installations

Install a vapor barrier (over cementitious subfloors) or a vapor retarder (over wood subfloors). Teragren recommends the use of a low-VOC, premium, water-free flooring adhesive and/or vapor barrier system specifically recommended by the adhesive manufacturer for use with bamboo flooring. Note: Always use a vapor barrier and adhesive system manufactured by the same company – never mix products.

The sub-floor must be extremely flat (see adhesive manufacturer's specifications). The installed flooring should be square with the space, and run perpendicular to the joists. Leave a 1/2" expansion and 1/2" contraction space from base plate or wall. Starter rows should be held firmly in place using wedges. Once the starter rows are secure, apply the adhesive per the manufacturers' installation instructions. **NOTE:** Always remove any adhesive from the surface of the flooring (smudges, fingerprints, etc.) before it dries. Clean up as you go – do not wait until the installation is complete. Cured adhesives are very difficult to remove and may permanently damage flooring. **Always follow the adhesive manufacturer's installation instructions.**

For a list of adhesives warranted by their manufacturer(s) as being compatible with Teragren flooring products, please visit [http://www.teragren.com/downloads/Teragren\\_Adhesive\\_Guidelines.pdf](http://www.teragren.com/downloads/Teragren_Adhesive_Guidelines.pdf).

**Note:** Depending on the geographical area and interior climate control systems of the installation environment, to minimize expansion of nailed or glued-down floors that are wider than 20', installers may need to build-in additional spacing between planks and at the edge of rooms. Where additional spacing is required, use a removable spacer between every few rows of planks.

It is up to the owner/installer to confirm the warranty, the environmental statements of the manufacturer, and the suitability of any adhesive for the intended end-use. The selection and use of any adhesive / moisture control system is at the sole discretion and responsibility of the owner/installer.

### Floating Floor Installation

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. Install a vapor barrier or vapor retarder over the entire subfloor surface following closely the manufacturer's recommendations. Next, roll out 1/8" (3mm) padding (underlayment) one roll at a time over the vapor barrier or vapor retarder, being careful not to

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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: The use of an underlayment or padding thicker than 1/8" (3mm) 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:** No fastening to the subfloor is required in a floating-style installation. Walls are often not straight; therefore, it is very important to square the first row. Use a chalk line to ensure the rows are perfectly straight. Place a spacing wedge of the desired thickness against the wall. Prior to placing your first plank, squeeze the adhesive into the upper edge of the groove at the end of the plank. Lay the first plank with the long groove edge facing the wall and the tongued end against the spacing wedge. After applying glue to the groove on the end of the second plank, place it at the end of the first plank and gently tap into place. Repeat as required to complete first row. All adhesive spillage must be removed immediately as it occurs to prevent permanent damage to the flooring. Always follow the adhesive manufacturer's instructions as to how to remove unwanted adhesive.

**Second Row:** Begin the second row using the cutoff from the end of the first row as a starter plank for this row. This assures randomly staggered end joints. Apply adhesive to the end and side grooves and engage the planks. Use a tapping block to put the planks together (tap gently until a snug fit is achieved). Continue this process until all but the last plank is finished. Never strike the planks directly in order to engage the tongue and groove. Always use an approved tapping block and hold it tightly pressed to the tongue of the flooring. If not, damage to the top layer could result. It is extremely important that each completed row be secured to the adjacent row with straps or tape. If using tape, be certain that the tape is meant for the purpose of securing prefinished floating floors. Caution: The use of tape other than that specifically designed for prefinished flooring may remove the finish from your floor when the tape is removed.

**Completing Floor:** If necessary, cut planks lengthwise as required to fit planks for the final row. Remove all spacing wedges. Install molding as required to hide expansion gap. Remove all tape and or straps. **Note: Adhesive must be allowed to dry completely per manufacturer's instructions before placing furniture or allowing foot traffic. Never install cabinets or walls on top of a floating floor.**

### 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 1" (25.4mm) greater in diameter than the pipe or structure.

### Installation with Transition pieces:

Floating floors 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](http://www.radiantpanelassociation.org) for more information on radiant heat systems.

Vantage II flooring is suitable for installation over radiant heating systems capable of maintaining a surface temperature at or below 85°F. Please note that the underlayment may insulate the heat slightly from transferring up through the floor and that

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rugs placed on a floor heated by a radiant source can increase the surface temperature of that floor by 2-3 degrees Fahrenheit. If using an adhesive to “glue-down” bamboo flooring, please confirm with the adhesive manufacturer the suitability of the adhesive for use with radiant heating systems. 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. If no adhesive has been used, the radiant heating system may be reactivated after the flooring installation is complete. If adhesive has been used, follow the adhesive manufacturer’s guidelines regarding adhesive cure time before reactivating the radiant heating system. Please refer to [www.radiantpanelassociation.org](http://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:

This premium Teragren flooring product has been coated with a WOCA Natural Hardwax Oil finish. To maintain the beauty of your floor and preserve Teragren’s Finish Warranty please follow these simple guidelines:

#### Avoid problems:

- Remove shoes or ensure that shoes are clean
- Quickly remove all spills. Liquid will damage flooring and may void the Teragren Warranty
- Maintain the relative humidity of your environment in the 35-55% range
- Only use the following WOCA Natural Oil products for best results:
  - WOCA Natural Soap/ Master Soap
  - WOCA Maintenance Oil
  - WOCA Oil Refresher

WOCA products can be purchased at [www.wocadirect.com](http://www.wocadirect.com) or many online retailers like amazon, ebay, etc. Just type WOCA into any search field on those websites or [www.google.com](http://www.google.com)

#### Clean your floor:

- Sweep, dry mop or vacuum
- Damp mop with WOCA Natural Soap or Master Soap. WOCA Natural Soap or Master Soap can be diluted per the instructions located [here](#).
- **IMPORTANT NOTE:** If damp mopping, ensure that mop is only slightly damp to avoid water pooling/collecting between the planks which will damage your flooring and may void your Teragren warranty.

#### Refresh and maintain your floor:

- **Oil Regularly to get best results:** The use of WOCA Natural Soap/Master Soap for regular cleaning, bi-yearly “Oil Refreshing” and occasional use of “Maintenance Oil” will ensure the longest lifespan of your Teragren Vantage II flooring. Note: see individual product pages located at [www.teragren.com/downloads](http://www.teragren.com/downloads)
- **Maintenance Oil:** Prior to use review complete product instructions printed on the container. Use this product to repair, protect, and restore your floor’s entire surface. Residential flooring may require an application of Maintenance Oil every 4-6 years. To use, clean your floor, apply a very thin layer of maintenance oil using a cloth applicator allow the oil to react with the surface for 2 minutes, and then within 10 minutes, wipe off all oil until the surface feels dry. After treatment, your flooring may be walked on within 4-6 hours. Note: Do not use Surface Care soap on your floor until 7 days after treatment.

**IMPORTANT – DO NOT USE CLEANERS AND MAINTENANCE PRODUCTS OTHER THAN THOSE MANUFACTURED BY WOCA (WOOD-CARE DENMARK A/S) AS THESE PRODUCTS WILL VOID THE TERAGREN WARRANTY AND MAY HARM THE FINISH. DISPOSE OF OIL SOAKED RAGS PROPERLY TO PREVENT SPONTANEOUS COMBUSTION. RAGS SHOULD BE ALLOWED TO FULLY AIR DRY BY LAYING THEM FLAT ON A NON-COMBUSTIBLE SURFACE. RAGS ARE DRY WHEN STIFF. REVIEW AND FOLLOW ALL LOCAL REGULATIONS PRIOR TO DISPOSING OF OIL SOAKED RAGS.**

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