

# TESORO WOODS

## Tesoro Woods Super-Strand Bamboo by MOSO® Flooring Installation Instructions

*Please read thoroughly before beginning installation. These installation instructions are specifically intended for use with Super-Strand by MOSO solid click strand bamboo flooring. Go to Tesoro-Woods.com for other flooring products and recommendations.*

### General Precautions, Required to Maintain Warranty

Tesoro Woods Super-Strand Bamboo flooring products are quality inspected before packaging and shipping. Nevertheless, a final jobsite inspection of your flooring must be performed for grade, color, finish and quality. Ensure adequate lighting for proper inspection. If the flooring is not acceptable, contact your distributor immediately to arrange for replacement. Tesoro Woods will not accept responsibility for flooring installed with visible defects.

Wood flooring should be one of the last jobs completed on the construction project. Limit foot traffic on finished wood flooring.

Tesoro Woods Super-Strand Bamboo is appropriate for glue-down and floating installation only, and cannot be nailed down. Below-grade installation is NOT recommended and will void the warranty.

#### \*IMPORTANT\*

Direct-glue installation to on-grade concrete requires that a two-part epoxy vapor barrier be applied to the concrete before gluing (see below under “Glue Down Installation” for details and product recommendations). The perm rating of the vapor barrier must be less than or equal to 0.10 (per ASTM E-96), which is generally only achievable with a quality two-part epoxy system such as Franklin 531 or 531 Plus. Urethane and polymer vapor barriers will not achieve this rating and their use in place of epoxy will void the warranty.

Even when an epoxy vapor barrier will be applied, the concrete must be tested for moisture and meet the requirements listed below under “Pre-Installation Subfloor Requirements.”

In all on-grade floating installations, a 6-mil polyfilm moisture barrier must be installed beneath the underlayment pad. See below under “Floating Installation” for details.

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## Acclimation Instructions

### \*IMPORTANT\*

Prior to installation, this flooring must be acclimated for a minimum of 48 hours in the space where it will be installed. **Flooring must remain in its sealed foil packaging or box.** Due to its extreme density and resin content, acclimation will progress more slowly with Strand Bamboo than with traditional hardwoods. In very dry or very humid climates, proper acclimation may take several weeks. Refer to the NWFA climate zone map for references specific to your area. Acclimation is relative to humidity and moisture, and is not necessarily related to a specific timeframe.

It is the responsibility of the installer to ensure that the moisture content of the flooring has equalized with its environment. Failure to acclimate properly may result in shrinkage, gapping, expansion, cupping, edge-crushing and/or buckling. Permanent HVAC should be on and operational and maintained between 60-75°F with relative humidity of 40% to 65% for a minimum of 14 days prior to delivery. As well as during and after installation of the flooring. Do not acclimate or install the floor during periods of unseasonal weather. A relative humidity range of 40-65% must be maintained year-round to avoid excessive movement of the floor and maintain the warranty. The floor may swell, cup or crown if relative humidity is outside these parameters, and will not be covered under the Tesoro Woods Warranty. Use of a humidification/dehumidification system may be required to maintain proper humidity levels, particularly over radiant heat.

Portions of the flooring should be distributed to acclimate in the actual rooms where it will be installed. **Flooring must remain in its sealed foil packaging or box.** Do not store the cartons of flooring directly on concrete or near outside walls. Boxes should be flat in the room.

## Pre-Installation Moisture Reading

When checking the moisture content of Tesoro Woods Solid Strand Bamboo, pin-type moisture meters may give misleading readings because the resin content of the material inhibits electrical conductivity. Non-intrusive surface meters tend to give more accurate readings than pin-type meters. All moisture meters must be adjusted to specific settings for different species.

For Tesoro Woods Solid Strand Bamboo, set the meter for Ipe (Brazilian Walnut). Using the standard settings for Douglas Fir or Red Oak will give inaccurate readings and could result in flooring being installed when it is not yet properly acclimated. If the literature provided with your moisture meter does not list a setting for Ipe (Brazilian Walnut), contact the meter manufacturer to determine the correct setting.

Prior to installation of any flooring, the installer must ensure that the jobsite and subfloor meet the requirements of these instructions. Flooring should be one of the last items installed in any new construction or remodel project. All work involving water or moisture should be completed before

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flooring installation, including painting, as this will create an artificially high humidity level in the room. Installing onto a wet subfloor may cause permanent damage to the flooring.

Tesoro Woods is not responsible for flooring failure resulting from unsatisfactory jobsite and/or subfloor conditions.

When installing over radiant heat, additional restrictions apply, and the Floating Installation method must be used. This flooring is suitable for installation over some hydronic radiant heat systems when installed as a floating floor, but no electric systems. Please carefully read the "Radiant Heat" and "Floating Installation" sections below before finalizing product selections.

## GENERAL SUBFLOOR PREPARATION

PRE-INSTALLATION SUBFLOOR REQUIREMENTS – All Subfloors must be:

- 1) Clean - Subfloors must be scraped clean and free of debris. Debris on the subfloor may cause over-wood and uneven surfaces in the finished floor, poor fit between planks, and poor adhesive bond in Glue-Down installations. For Glue-Down installations, subfloor must be free of wax, grease, paint, sealers, old adhesives, etc., which can be removed by sanding.
  - 2) Flat - Subfloors must be flat to within 3/16" over any 10' radius and 1/8" over any 6' radius. Check the flatness using a straight edge, laser line or string line. Grind, scrape, sand or shim all high or low spots. On concrete subfloors, grind all high areas and fill low areas using a quality cementitious leveling compound. Ensure that all fasteners securing the subfloor are set flush.
  - 3) Dry - Check and record all moisture and temperature conditions prior to installation. Visually check the jobsite for potential moisture problems. Look for signs of water intrusion around window and doors. Check for mold or fungus on walls and all other areas. Water intrusion may necessitate structural repairs and/or create conditions unsuitable for flooring installation. Flooring must be attached to subfloor with a minimum temperature of 64°F.
- Plywood and composite subfloors should be checked using a calibrated moisture meter. Be sure to use the correct moisture meter setting for the species being checked. Carefully follow the moisture meter manufacturer's operation instructions. Moisture readings should not exceed 10% in any location and the moisture variation between the subfloor and the flooring should not exceed 2% at time of installation.
  - Basements and crawl spaces must be dry and well ventilated. Crawl spaces must be a minimum of 18" high from the ground to the bottom of the joist. Dirt floors in crawl spaces should be covered with a 6-10 mil black plastic to reduce moisture migration. Seams should overlap and be sealed with waterproof tape. Perimeter crawl space cross ventilation should equal 1.5% of the square footage. Vents must remain open year-round.

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- Concrete subfloors must be fully cured, at least 60 days old, and should have minimum 6-mil polyfilm between the concrete and ground. Lightweight concrete or Gypcrete can hold more moisture and may take longer to dry to an acceptable moisture content.
  - ALL Installations over concrete require the use of a Calcium Chloride test per ASTM F 1869, or an in-situ Relative Humidity test using probes inserted into holes drilled into the concrete. Test all areas where wood will be installed. The results of the Calcium Chloride tests should not exceed 3 lbs per 24 hours per 1000 square feet, and in-situ test results should not exceed 75% RH. Carefully record all results. (These tests give a snapshot of moisture conditions at the time of the test, but do not reflect the permanent year-round condition of the substrate. A concrete slab on or below grade that measures dry today may become moist in the future and cause floor failure. Tesoro Woods is not responsible for site related moisture issues.)
  - More stringent requirements regarding the dryness of the subfloor apply when installing over radiant heat. See below under 'RADIANT HEAT' for details.
  - Recommended to use PE damp proof membrane. The membrane must overlap by 12".
- 4) Structurally Sound - Wood subfloors must be well fastened. Use screws every 6" and replace subfloor panels/boards as necessary to eliminate all movement and squeaking. Acceptable subfloor types:
- CDX plywood - at least 5/8" thick for joist spacing up to 16" on center, minimum ¾" thick for joist spacing greater than 16" on center (19.2" maximum). Plywood subfloors installed over concrete must be installed in accordance with the guidelines set forth by the National Wood Flooring Association (NWFA) – [www.nwfa.org](http://www.nwfa.org)).
  - OSB - at least ¾" thick, PS 2-92 rated or PS 1-95 rated.
  - Existing hardwood flooring over a suitable subfloor as outlined above. Existing floor must be well-fastened, smooth, and for Glue Down installations, unfinished.
  - Underlayment grade particleboard - Minimum 40 lbs. density
  - Concrete slab - Concrete must be at least 3000 lbs. density for Glue Down installations.
  - Lightweight concrete (gypcrete) – Floating Floors only. Gluing to concrete that is less than 3000 lbs. density is NOT WARRANTED. Tesoro Woods provides no guarantee that lightweight concrete or gypcrete will remain structurally sound during the life of the floor. Separation of the flooring from the subfloor caused by deterioration or fracturing of the substrate will not be considered a product failure.
  - Ceramic tile – Floating Floor only. Tile must be well-adhered and flat to 3/16" over any 10' radius.
  - Resilient tile & sheet vinyl - must be well bonded to subfloor, in good condition, clean and level. Do not sand existing vinyl floors, as they may contain asbestos. For glue-down, tile/vinyl must be new and non-urethane-coated.

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## TYPICAL INSTALLATION TOOLS NEEDED:

FOR ALL INSTALLATION METHODS:

- Tape measure
- Wood or plastic spacers (1/2")
- Chalk line
- Tapping block
- Crosscut power saw
- Pry bar or pull bar
- Pencil
- Hammer

FOR GLUE-DOWN INSTALLATION, YOU WILL ALSO NEED:

- A premium, water-free, moisture cure urethane adhesive such as Bostik's BEST or Franklin 811
- Adhesive trowel as recommended by the adhesive manufacturer
- A premium two-part epoxy vapor barrier system such as Franklin 531, Franklin 531 Plus, or equivalent, with a perm rating equal to or less than 0.10 per ASTM E-96
- Applicator as recommended by the two-part epoxy vapor barrier manufacturer

NOTE: Always check with the manufacturers to ensure that the vapor barrier and adhesive you have chosen are compatible with each other. Some products may not be compatible and using them together may result in floor failure.

FOR FLOATING INSTALLATION, YOU WILL ALSO NEED:

- 1/8" thick underlayment pad
- 6-mil polyfilm (if installing on grade)
- Clear waterproof tape

## GENERAL INSTRUCTIONS – ALL METHODS

Make sure subfloor is tested for moisture first and is properly prepared. Since Bamboo, like wood, expands with any increase in moisture content, always leave at least a 1/2" expansion space between flooring and all walls and any other permanent vertical objects, (such as pipes and cabinets).

PLEASE NOTE: Bamboo expands and contracts along its length as well as its width, so it is critical to leave expansion space around the entire perimeter of the floor. This space will be covered up once

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you reapply base moldings around the room. Use wood or plastic spacers during installation to maintain this ½" expansion space.

On wood subfloors, if the subfloor is fastened to joists or trusses, the flooring should be installed perpendicular or at a 45° angle to the joists/trusses.

No area of connected flooring can span greater than 25 feet in width or 50 feet in length without adding spacers or compensating for additional movement. For larger spans, install T-moldings or use spacers that will allow the flooring to expand and contract normally. More or less spacing may be needed depending on geographical area and specific site conditions. Before laying floor, install approved underlayment or adhesive as outlined below in the section specific to your chosen installation method.

Begin installation next to an outside wall. This is usually the straightest and best reference for establishing a straight working line. Establish this line by measuring an equal distance from the wall at both ends and snapping a chalk line. The distance measured from the wall should be the width of a plank plus ½" for expansion space. You may need to scribe cut the first row of planks to match the wall in order to make a straight working line, as most walls are not straight. Lay a few rows (no glue), before starting installation to confirm your layout decision and working line.

Start with the tongue side toward the wall, and work from left to right. Work from several open boxes of flooring because this will allow you to select the varying grains & colors and to arrange them in a pleasing pattern. The actual floor may differ in grain and color from the samples used in selecting the product and is not considered a defect. It is the installers' responsibility to work with the end user to determine the expectations of what the finished floor will look like. If the range of color in the shipment is not satisfactory after opening a few boxes, do not begin installation. Contact your dealer immediately to arrange a return.

When laying flooring, stagger end joints from row to row by at least 8". Avoid 'H' patterns, where planks just two rows away from each other end in the same location, by starting each row with a plank cut to a random length. When cutting the last plank in a row to fit, you can use the cut-off end to begin the next row. If cut-off end is 8" or less, discard it. Instead cut a new plank at a random length (greater than 8") and use it to start the next row. Always begin each row from the same side of the room. Use a tapping block to make sure that the locking mechanism is fully and properly engaged.

## SPECIFIC INSTALLATION INSTRUCTIONS

### for Solid Click Strand Bamboo Flooring based on installation method: GLUE DOWN INSTALLATION

Carefully review the adhesive, leveler and vapor barrier manufacturers' instructions for subfloor preparation, application methods and tools, proper trowel size, required temperature/humidity

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conditions, and the adhesive open or set time before beginning installation. Working properties, compatibility between products, and set times may vary between brands so it's important to follow the label instructions specific to your brand (not all adhesives and vapor barriers are cross-compatible). Tesoro Woods does not guarantee or warrant the performance of third party installation products, and specific questions about their use should be directed to their manufacturer.

Apply two-part epoxy vapor barrier, carefully following the manufacturer's instructions. Pay close attention to proper application rate and dry time.

Trowel adhesive onto a section of subfloor that can be covered with flooring within the working time recommended by the adhesive manufacturer. Lay the first row of flooring into the adhesive with tongue facing the wall, and continue laying floor as described above under "GENERAL INSTRUCTIONS – ALL METHODS." Always check your working lines to maintain alignment. Use spacers to help ensure the installed flooring does not move on the wet adhesive.

When first section is finished, continue to spread adhesive and lay flooring section by section until installation is complete. Periodically lift a plank from the wet adhesive to ensure full transfer to at least 90% of the planks. USE A CLEAN, DRY CLOTH TO IMMEDIATELY REMOVE ANY ADHESIVE FROM THE FLOORING SURFACE. If adhesive cannot be completely removed with a dry cloth, use mineral spirits. Never let flooring adhesive dry completely on the finished surface.

Within the adhesive working time, walk each section of flooring to make sure it is well bonded to subfloor. Flooring planks on the perimeter of the room may require weight on them until the adhesive cures enough to hold them down. Roll the floor with a 100lb roller every 2-3 hours during and immediately after installation, or as directed by the adhesive manufacturer.

## RADIANT HEAT

The glue down installation method is the only approved method when installing Tesoro Woods Super-Strand Bamboo over radiant heat. NOTE: Seasonal gapping and surface checking (cracking), particularly at the ends of planks, should be expected in installations over radiant heat and do not constitute a product failure.

## System Requirements & Site Conditions

1. The radiant heat system must be hydronic (using warm water). Tesoro Woods Flooring is not warranted over electric radiant floor heat systems.
2. The flooring should be fully glued to the subfloor, with a glue that is suitable for using on a floor heating system and must be applied according to the manufacturer's instructions.
3. Flooring installed in multi-unit projects where the radiant system temperature is not regulated separately in each unit is not warranted.

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4. The heat system must be designed for wood flooring and have an outside temperature sensor and in-floor direct contact temperature sensors. Do not use the heating system for 2 weeks after installation.
5. The system controller must be designed for wood flooring and have a temperature control mechanism that will not allow the surface temperature of the subfloor to exceed 82°F.
6. The system must be kept on and within 15°F of normal operating temperature AT ALL TIMES and should never be turned off completely. Temperature in the installation area must be controlled between 60°F and 75°F at all times.
7. Excessive heat, rapid heating, and/or failure to maintain humidity levels between 35% and 55% are likely to cause cracking, cupping and other forms of floor failure. Use of a humidification/dehumidification system may be required to maintain proper humidity levels, particularly over radiant heat. Failure to maintain proper humidity levels will void all warranties.

## FLOATING INSTALLATION

Heavy objects such as counters, kitchen islands, and large stoves or refrigerators should be in place prior to the installation of a floating floor. Compressing a floating floor against the subfloor with excessive weight could inhibit the floor's ability to move in response to changes in humidity and may result in gapping or cupping.

Laying polyfilm: lay 6-mil Polyfilm with seams overlapped 8". Fasten seams every 18-24" with clear waterproof packing tape. Run the outside edges of Polyfilm up perimeter of each wall 4". Trim after flooring installation is complete.

Laying pad: lay 1/8" thick underlayment pad by butting edges and not overlapping. Tape the full length of the seam with clear waterproof packing tape. Leave 1/2" space between the pad and all walls and permanent vertical fixtures.

Proceed with laying floor as described above under "GENERAL INSTRUCTIONS – ALL METHODS."

## Preparation, Testing & Installation

1. All concrete must be allowed to properly cure and dry for a minimum of 4 weeks prior to the operation of the radiant heat system. The system should then be operated to at least 2/3 maximum output for a minimum of 2 weeks prior to delivery of flooring to allow moisture from the subfloor to dissipate and reach equilibrium.
2. For concrete subfloors, conduct and document Calcium Chloride Tests per ASTM F1869. Test results must not exceed 2.0 lbs. per 1000 square feet per 24 hours. If moisture levels exceed this limit, do not install the flooring.



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3. For wood subfloors, use a pin type meter to document the moisture content of the subfloor. Moisture readings should not exceed 8% in any location and readings for the subfloor must be
4. within 2% of the flooring at the time of installation. If moisture levels exceed these limits, do not install the flooring.
5. Flooring must be delivered to the jobsite and acclimated to the installation environment a minimum of 10 days prior to the start of the installation.
6. Three (3) days prior to flooring installation, reduce the thermostat to 65°F. As always, relative humidity of the jobsite must be maintained between 35% and 55%.
7. Beginning 48 hours after installation, raise the temperature of the heating system to its preferred operating level slowly over a period of 5 days.

## After Installation

1. 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 a breathable protective covering such as Ram Board. Do not use Red Rosin paper, as it may discolor the finish, and do not use polyfilm or other non-breathing coverings as they can cause the floor to become damaged from humidity buildup. Clean the floor thoroughly before laying the covering to ensure that no debris is trapped underneath. Tape pieces of protective covering together but do not tape them to the wood flooring.
2. Remove expansion spacers and reinstall base and/or quarter round moldings to cover the expansion space.
3. Dust mop or vacuum the floor thoroughly to remove any dirt or debris.
4. Buff the floor with lambs-wool pads in order to remove any loose splinters, residues, footprints, etc.
5. Install any transition pieces that may be needed (reducers, T-moldings, nosing, etc.).
6. Place walk-off mats at all entrances to help collect dirt and debris that could damage or dull the flooring finish.
7. Install felt floor protectors underneath all furniture.
8. In areas such as bathrooms, kitchens, and spaces where food service occurs, top-coating the floor will help prevent against moisture damage. In heavy food service areas such as restaurants, two to three top-coats are recommended. See below under "Top-coating/Re-coating" for specific instructions.

The warranty for Tesoro Woods Strand Bamboo Click Flooring is subject to the correct installation and maintaining the relative moisture ranges stated in these instructions. For more information on bamboo flooring and flooring accessories, please contact your supplier.

Thank you for choosing Tesoro Woods.