



Perennial Wood™
Porch Flooring
Installation Guide

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CONGRATULATIONS ON YOUR PURCHASE

of Perennial Wood porch flooring. This detailed guide provides you with step-by-step installation instructions. This document is very important and should be followed closely during porch installation. Keep a copy for your records. As you enjoy your Perennial Wood porch, always abide by the care and safety precautions in this document.

Glossary

Blocking — Affixing short pieces of joist lumber, either alongside or perpendicular to existing joists, to provide additional material in which to insert decking or flooring fasteners.

End-butt — The joint created when two porch boards are placed end-to-end.

Flashing — Thin metal, plastic sheeting, or strips used to channel precipitation away from interior components of a structure at angular transition points such as wall-to-porch ledger board.

Joist — A horizontal structural support on which porch boards rest and are directly attached.

Ledger board — A horizontal porch structural board that is attached directly to an existing structure.

Pilot holes — Holes drilled specifically to guide the insertion path of a screw, nail, or possibly a larger drill bit.

Shims — Thin, tapered pieces of wood that raise the height or angle of a porch board.

Starting board — The first porch board attached to the substructure during the installation process.

Through-face fasteners — Wood screws or finish nails that are installed in the exposed face of porch boards that typically leave visible fastener heads and associated holes in the finished work.

Perennial Wood™ Porch Flooring Quick Start Guide

This Quick Start Guide covers the unique requirements for installing Perennial Wood porch flooring. While standard Southern pine porch flooring installation practices generally apply, read this installation guide completely for more detailed information.

Perennial Wood is different from other porch flooring in that it is typically dry (5% moisture content or less) when it arrives at the job site. As the porch flooring acclimates or becomes saturated, some expansion will occur, so proper installation techniques listed in THE MUST DOs section of this document should be followed. If you have any questions, contact a Perennial Wood field representative or the Perennial Wood Customer Center at 800-530-7495.

Follow the required installation guidelines below when constructing your porch with Perennial Wood porch flooring. Failure to follow THE MUST DOs will void the warranty.

THE MUST DOs

- ▶ Use only stainless steel fasteners and connectors. Fasteners and connectors made with corrodible metals may be damaged over time and may degrade Perennial Wood products.
 - ▶ Although Perennial Wood has very good dimensional stability, tongue-and-groove porch flooring should always be installed to allow for potential expansion.
 - ◆ Install porch flooring boards with **1/2" spacing around all fixed structures** (wall, posts or columns). This space can be covered by an exterior trim board. Additionally, choose one of the following:
 - Acclimate** the flooring boards prior to installation by removing packaging and adding space between each board, in a covered, well-ventilated area, similar to the use conditions, for one to two weeks to allow for moisture equilibration.
- OR**
- Install spacing in between boards.** For 4-7/8" wide porch flooring, install a 1/8" spacing between every 3rd and 4th board. For 3-1/8" wide porch flooring, install a 1/8" spacing between every 5th and 6th board.

- ▶ Install on a maximum joist spacing of 16" when boards are installed at a 90 degree angle to the joists.
- ▶ Install above ground and greater than 18" above exposed soil or moisture barrier to allow proper ventilation.
- ▶ Slope at 1/8" to 1/4" per foot away from the house to allow moisture to run off the porch.
- ▶ Install and secure stainless steel fasteners through the porch board at every joist. Fastening can be through the tongue or through the face and should be checked on every board.
- ▶ If Perennial Wood tongue-and-groove porch flooring is not being installed under a roof and will be exposed, see installation tips for nonacclimated and/or exposed porches section of this guide.

Perennial Wood™ Porch Flooring Detailed Installation Guide

Important Safety Precautions

Read and follow all safety precautions and information for specific installation details and requirements prior to installing Perennial Wood porch flooring. Failure to do so may result in injury or death.

WARNING Perennial Wood porch flooring is not rated for ground or concrete contact.

Direct contact of this product with the ground or concrete may lead to structural damage of this product. To reduce the risk of serious injury or death from collapse hazard, Perennial Wood porch flooring should be installed only on a substructure rated for direct contact with the ground.

NOTICE Use only stainless steel fasteners and connectors. Fasteners and connectors made with corrodible metals may be damaged over time and may degrade Perennial Wood products.

A Safety Data Sheet (SDS) for Perennial Wood is available at www.PerennialWood.com.

Tools

Perennial Wood requires no specialized equipment and can be installed using standard carpentry tools such as saws, drills, or flooring nailers.

Storage and Handling *(before and during construction)*

WARNING To reduce the risk of trip/fall hazards and/or serious injury or death:

- ▶ Exercise caution when lifting and bending during loading/unloading to help avoid injury from strain and/or falling.
- ▶ Always operate forklifts, cranes, and other special handling equipment in accordance with manufacturer instructions.
- ▶ Never allow Perennial Wood to be dumped off a vehicle.
- ▶ Elevate the wood above ground level and cover with plastic to protect against mud and debris prior to and during construction.
- ▶ Exercise care when offloading from a vehicle to prevent excessive bending and falling impact.

Information for Building Officials

Jurisdiction building officials may consult ICC Evaluation Services report number ESR-1690 for additional information on Perennial Wood products at www.icc-es.org.

Porch Substructure and Joist Spacing

Perennial Wood™ substructure recommendations follow the Guide to Building a Porch published by the Southern Forests Products Association (<http://southernpine.com/porch.shtml>) and the “Design for Code Acceptance 6 (DCA-6). Exceptions are noted throughout this document and summarized on page 1 (Perennial Wood Porch Flooring Quick Start Guide).

Perennial Wood porch designs should be prepared or approved by a structural engineer or architect and must meet the requirements of your local jurisdiction’s building codes. Always obtain required permits prior to construction. Structural support requirements are the same when constructing a new porch or resurfacing an existing structure with Perennial Wood porch flooring. The substructure must be constructed to adequately support the required loads.

Perennial Wood porch flooring is approved for above ground use (greater than 18" above exposed soil or moisture barrier).

Perennial Wood porch flooring is suitable for joist spacing up to 16" on center for boards installed at a 90 degree angle to the joists.

If boards are installed at a 45 degree angle to the joists, it is recommended that 12" joist spacing be used to properly secure the porch boards to the substructure. Porch boards placed at an angle of 45 degrees to the joists must be supported by a minimum of four joists and be connected to each joist with a stainless steel flooring nail or staple, or by two stainless steel through-face fasteners.

It is important to ensure the top of each joist is at the same height across the porch substructure to keep flooring boards level.

A gentle slope away from the building structure is recommended to ensure water drains away and does not puddle on the porch. This slope is generally accomplished by sloping the substructure 1/8" to 1/4" per foot away from the building structure.

Moisture Content and Movement

TruLast™ Technology makes Perennial Wood three times more resistant to shrinking and swelling than unmodified wood; however, as with any wood product, Perennial Wood porch boards will exhibit some movement when exposed to large variations in humidity. Boards are typically shipped dry, so expect an unacclimated porch board to undergo some level of swell (typically 1% of the face width) the first time it becomes wet.

NOTICE Failure to allow appropriate space for movement may lead to structural damage to this product. To reduce the risk of damage due to movement, Perennial Wood porch flooring should be installed to allow for movement specified by the parameters outlined in the following.

For best results, consider the following recommendations for installing Perennial Wood porch flooring:

- ▶ Acclimate the flooring boards, removing packaging and add space between each board in a covered, well-ventilated area for 1 to 2 weeks before installation. If a covered area is not available, a loose tarp may be draped over the unwrapped and spaced boards while it is acclimating. Make sure the boards are not sitting directly on the ground. It is important that the flooring boards have a chance to equilibrate with the humidity in the installation environment to reduce the amount of the initial swell and to reduce the potential of porch board tongues cracking on insertion of flooring nails. (If you do not plan to acclimate and moisture is a problem, consider using washer row spacing. See instructions on page 10.)
- ▶ Soil under the porch should be sloped away from the structure to allow drainage. Cover soil under the porch with 4-mil polyethylene plastic sheeting.
- ▶ Design vents or skirting under the porch to allow for adequate airflow under the porch.
- ▶ A gentle slope away from the building structure is recommended to ensure water drains away and does not puddle on the porch. This slope is generally accomplished by sloping the substructure 1/8" to 1/4" per foot away from the building structure.
- ▶ Allow for a 1" overhang of porch boards on the edge of the porch. Make sure ends of porch boards are painted with the paint manufacturer's required number of coats of paint. This will retard moisture migration into the ends of the boards.
- ▶ Always leave a 1/2" minimum expansion space between any fixed surfaces (such as an outside wall or column) to allow space for expansion. This space can be covered with an exterior trim board.
- ▶ Install large roof overhangs and gutters when possible to shelter the porch from excessive rain.
- ▶ If moisture management is going to be an issue due to the jobsite installation constraints, consider pre-priming boards on all 6 sides to reduce the rate of swelling and minimize the gapping between boards.

- ▶ Perennial Wood porch flooring is approved for covered porches. If installation occurs before roof is constructed, Perennial Wood porch flooring should remain dry. Tongue-and-groove porch flooring is not intended to be used for a fully exposed deck.
- ▶ If porch flooring boards are likely to get wet during installation, consider using washer row spacing as outlined in the step-by-step installation section of this guide.

Attachment of Porch Board and Fasteners

WARNING Perennial Wood is not rated for ground contact. Direct contact of this product with the ground or concrete may lead to structural damage of this product. To reduce the risk of serious injury or death from a collapse hazard, Perennial Wood porch flooring should be installed only on a substructure rated for direct contact with the ground.

NOTICE Use only stainless steel fasteners and connectors. Fasteners and connectors made with corrodible metals may be damaged over time and may degrade Perennial Wood products.

To maximize the integrity, appearance and performance of your porch, use the correct stainless steel fasteners. Properly attach the porch flooring boards to the substructure joists.

The end of each flooring board must be adequately supported by a joist. For best appearance and porch strength, end-butteted joints should be staggered to prevent direct alignment of the ends. Blocking may be required at end-butteted joints to ensure both boards are fastened properly and to give adequate room for the flooring nail gun to be used.

Fasteners used in coastal regions must be 304 or 316 stainless steel. Two methods can be used to fasten porch boards:

- ▶ Stainless steel barbed or serrated flooring T (Figure A) or L nails/cleats (Figure B) or 1/2" crown flooring staples (e.g., Simpson Strong-Tie 2" long, 15-16 gauge) (Figure C).
- ▶ Through-face fastening with stainless steel wood screws (e.g., Simpson Strong-Tie #7 trim head 2" or 2-1/4" wood screws) (Figure D).



Figure A

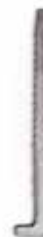


Figure B



Figure C



Figure D

All hardware should be used according to fastener manufacturers' instructions.

For repairing boards with broken tongues or securing washer row gap spacing, through-face fastening with stainless steel finish nails (e.g., Simpson Strong-Tie 2 1/2" 16-Gauge Straight, Adhesive Collation, T-Style Head Finishing Nails).

Step-by-Step Installation Guide

1. Each porch board must be installed flush and tight against every joist with a fastener inserted through the porch board and joist. Ensure joists are properly aligned on top; use shims if necessary. Joists must be adequately sloped at a recommended minimum of 1/8" to 1/4" per foot away from the building structure to allow moisture to run off the porch.
2. To maximize beauty, the more visually appealing side of each Perennial Wood porch flooring board should be facing up within the walking surface. It is not necessary to orient the boards all crown/bark side down or up. The flooring actually performs better if the boards are installed randomly with regard to crown/bark side orientation.
3. Align the first board with the grooved edge toward the building structure with a 1/2" gap. If the building structure is not square, a chalk line may be used to set the first board square. Leaving a 1/2" minimum expansion space between any fixed surfaces (walls, posts or columns) will allow space for expansion and can be covered with an exterior trim board.
4. Pre-drill pilot holes through the porch board and joist with a 1/8" diameter bit.
5. Attach the first three 3-1/8" face starting boards or the first two 4-7/8" face starting boards using stainless steel #7, 2-1/4" trim head wood screws. Screws should be attached through the face of the board into the joist at a 90 degree angle to the joist, approximately 1" from the grooved edge of the board and at least 3/8" from either end of the board. (See Figure E).



Figure E

- A. Trim head wood screws may be counter sunk and filled with a high quality exterior paintable/stainable wood filler (preferably a polyurethane or epoxy-based filler).
 - B. Two wood screws are required on each board at each joist. These wood screws must be approximately 1" from the tongue-and groove edges of the board and at least 3/8" from either end of the boards.
6. Attach the tongue edge of the next board, as well as all additional boards, with stainless steel barbed 2", 15 to 16 gauge flooring T or L nails/cleats or 1/2" crown staples. Fasteners should be attached at 45 degrees from vertical, just above the tongue and into the porch board and joist.
- A. Fasteners should be installed using a flooring nailer (see Figure F) or staple gun that uses the approved fastener types. Test the bottom plate/foot of the nailer/staple gun to ensure the fastener is inserted at a 45 degree angle into the top of the tongue and through the flooring board. The bottom plate/foot may have to be replaced to be able to insert the fastener at the correct angle. Most nailers/staple guns come with multiple plates.



Figure F

- B. Each fastener should be seated just below the surface of the edge to ensure the next board will fit flush. The depth of the fastener should be approximately 1/16" below the surface.
- C. Installers should adjust the flooring nailer or staple gun for the correct fastener depth per the tool manufacturer's recommendations (generally 80 to 90 psi). Alternatively, a nail setting tool or punch is recommended to drive fasteners just below the surface.
- D. Applying pressure to the nailer by holding it down firmly, centering it on the joist, and stabilizing it will ensure the nail/staple is inserted properly into the porch board and joist. It is critical that a nail/staple be firmly attached to every board at every joist to prevent the boards from

rising off the joists when swelling occurs. To verify every board is firmly attached, reach down and pull up on each board during installation.

- E.** If the tongue of a board cracks, especially at the edge of the porch, replace the board, or insert a 2-1/2" stainless steel finish nail into the surface of the board at a 90 degree angle to the joist. This will prevent the board from rising off the joist when swelling occurs after the first wetting. Acclimation of the boards before installation dramatically reduces the potential to crack a porch board tongue during installation.
- 7.** Install each additional board by inserting the grooved edge against the tongue of the adjacent board installed previously. Apply light pressure if necessary to ensure the board is as tight as possible against the previous board. Use a soft rubber mallet to tap the board into place and reduce risk of edge and surface damage.
- 8.** When end-butt joints are necessary, install the boards with matching end cuts as closely as possible to minimize space between the ends of the boards. Insert a flooring nail or staple through the tongue of each butted board, into the joist, at least 3/8" from the end of each board. Blocking may be added under butt joints to provide more support and space.
- 9.** Repeat steps 1 through 9 until the outer edge of the porch is complete.
- 10.** To finish the edge of the porch, the final board may require ripping on a table saw. To accomplish this, remove the tongue and specified width of the last board to ensure that the last board width lines up with the final edge of the porch.
- 11.** Before attaching the last board, predrill pilot holes through the porch board and joist with a 1/8" diameter bit.
- 12.** Attach the last board using stainless steel #7, 2-1/4" trim head wood screws through the face of the board. Wood screws should be installed approximately 1" from the ripped edge of the board at every 16" or 24" center spacing and at least 3/8" from either end of the boards.
 - A.** Trim head wood screws and finish nails may be counter sunk and filled with an exterior paintable/stainable wood filler which has been tested with the surface finish to be compatible (preferably a polyurethane or epoxy-based filler).

Finishes

- ▶ Refer to Choosing a Finish for the type of finishes that are suggested for use on Perennial Wood porch flooring. Although it is not required to prime all six sides of the porch boards before installation, it may reduce gapping between boards if moisture management is a problem due to the jobsite installation.
- ▶ Follow the coating manufacturers' recommendations. Lightly sand the porch surface prior to coating. Prime and paint all exposed surfaces of each porch flooring board after installation with high quality porch or floor paint or stain which is approved for outdoor use on wood. Paint each porch board with the same number of coats on all surfaces, including the exposed ends to manage water absorption through the ends of the boards.
- ▶ Apply paint as quickly as possible after installation to reduce the small amount of checking that may occur if the wood surface remains unprotected in sun and rain exposure.
- ▶ Apply paint only when the boards are dry to prolong the life of the coating and reduce potential chalking or peeling of the coating.
- ▶ If choosing white or a very light color, consider a stain blocking primer with mold/mildew resistance especially when moisture management is difficult.

Maintenance/Cleaning

NOTICE

To reduce the risk of damage to your porch:

- ▶ **Never use harsh cleaners. Commercially available porch cleaners may contain concentrations of bleach and other chemicals that may damage the surface.**
- ▶ **Never pressure wash. Pressure washing can result in serious surface damage.**
- ▶ **When removing snow or ice, always use tools that will not scratch or damage the surface. Use a broom or plastic-edged shovel.**
- ▶ Routinely keep your Perennial Wood porch free of debris such as leaves and grass clippings by sweeping or blowing them off. Clean your Perennial Wood porch with water and a mild soap (neutral pH) as needed using a mop (Magic Eraser). Refer to the Porch Cleaning Guide for suggestions on how to clean your Perennial Wood porch flooring.

Installation tips for Nonacclimated and/or Exposed Porches

NOTICE Perennial Wood porch flooring is not recommended for use in applications that are not covered.

The following are tips for installation in high-moisture environments or where acclimation will not be followed. The following information gives tips and best practices to help reduce movement associated with high moisture and long porches (over 30').

- ▶ For large porches or porches that may experience high-moisture environments, especially for the 4-7/8" boards, consider using washer row spacing per the following:
 - ◆ For 4-7/8" boards, install 3 boards according to steps 1-8A, then temporarily insert 1/8" thick flat washers or something of that dimension between the 3rd and 4th board, resting on top of the tongue of the 3rd board (See Figure G). Nail the 4th, 5th and 6th boards according to steps 1-8A. This ensures that a 1/8" gap remains every 3rd board across the porch which allows for expansion when wet. Insert a finish nail in the surface of every board just after the washer row space at every joist to secure the first board after each washer row. This forces movement of boards forward into the gap, allowing it to close after the initial swell which occurs after the first wetting. By fixing the gap with finish nails, the washer rows should stay closed after the initial swell.
 - ◆ For 3-1/8" boards, install 5 boards according to steps 1-8A, then temporarily insert 1/8"-thick flat washers or something of that dimension between the 5th and 6th boards, resting on top of the tongue of the 5th board (See Figure H). Nail the 6th, 7th, 8th, 9th and 10th boards according to steps 1-8A. This ensures that a 1/8" gap remains every 5th board across the porch which allows for expansion when wet. Insert a finish nail in the surface of every board just after the washer row space at every joist to secure the first board after each washer row. This forces movement of boards forward into the gap, allowing it to close after the initial swell which occurs after the first wetting. By fixing the gap with finish nails, the washer rows should stay closed after the initial swell.

Disclaimer

Read all safety precautions and information in this guide before beginning construction and be sure that a copy of this manual is available at each jobsite where Perennial Wood products are used. Installation of Perennial Wood must conform to the specifications provided in this manual.

Perennial Wood porch flooring should only be used for above ground, residential porches. Perennial Wood components are not intended for use in primary structural elements of the porch such as joists, girders, columns, and stair stringers. All fasteners used on Perennial Wood porch flooring should be stainless steel to maintain resistance to corrosion.

This installation guide does not modify or otherwise enlarge the limited warranty that accompanies this Perennial Wood product. It is the builder's responsibility to inspect all Perennial Wood pieces at the time of purchase and/or delivery. If questions arise about the suitability of this product for a project, consult a properly qualified professional such as an engineer or architect for an evaluation and recommendations.

Perennial Wood decking products may be used in conjunction with Perennial Wood porch flooring. Click [here](#) for specific instructions on how to install Perennial Wood decking. It is recommended that the builder obtain a copy of the current Prescriptive Residential Wood Deck Construction Guide (DCA-6) published by the American Wood Council (AWC) in conjunction with the American Forest & Paper Association, Inc. It is available as a free PDF download from the AWC website at <http://www.awc.org/Publications/DCA/DCA6/DCA6-09.pdf>.

Contact Information

For additional information or questions, contact Perennial Wood customer service at 1-800-530-7495 or info@PerennialWood.com, or visit our website at www.PerennialWood.com.

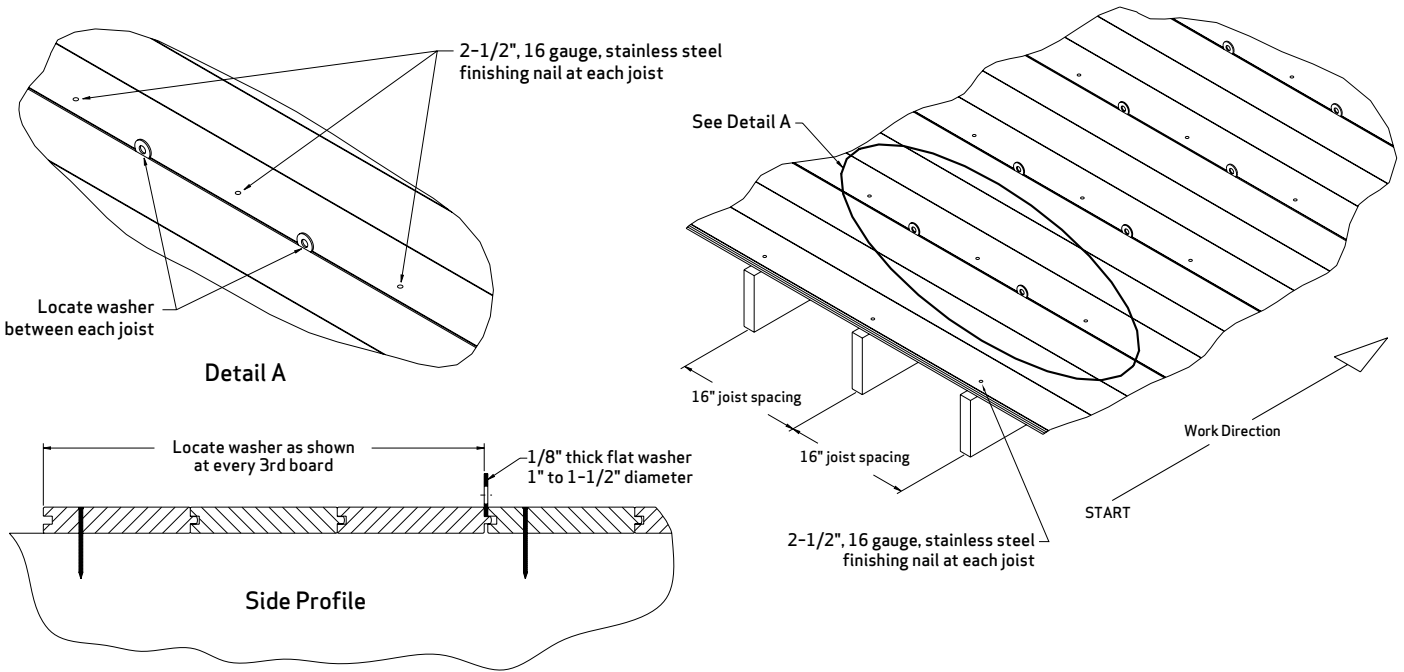


Figure G

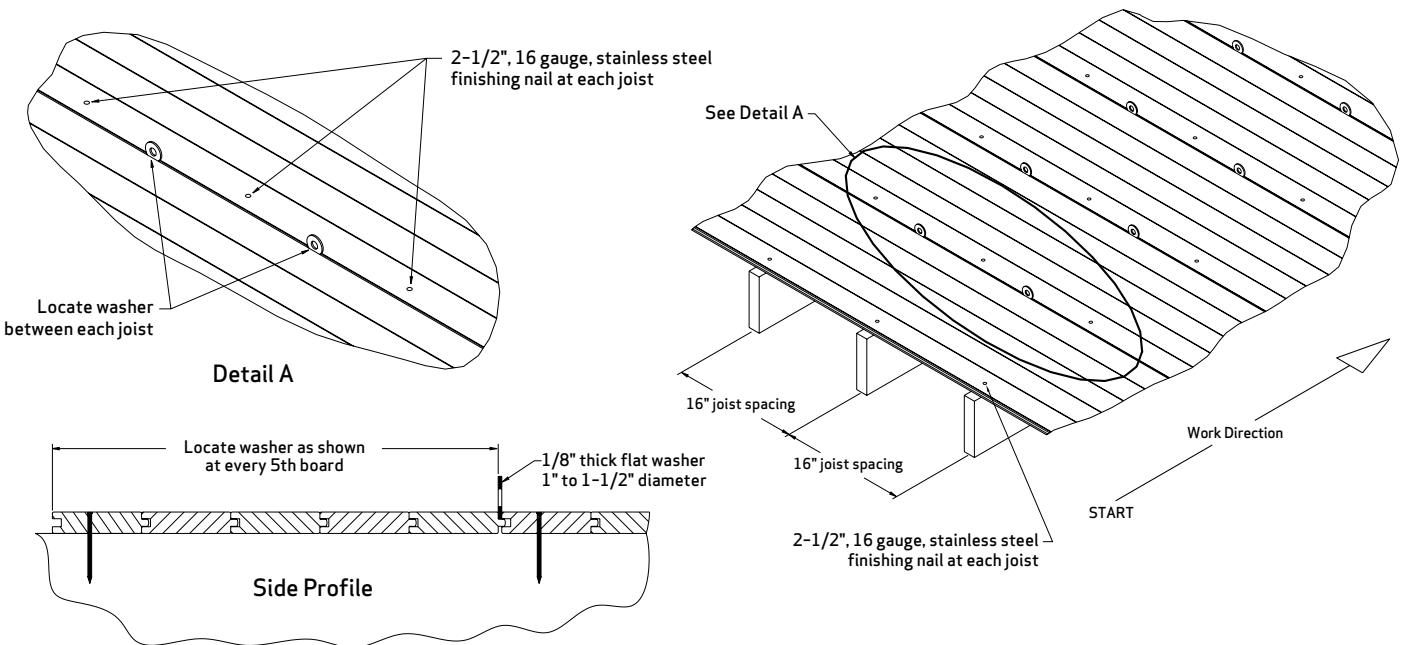


Figure H

EASTMAN

TruLast™ Technology has been developed and is backed by Eastman Chemical Company, a Fortune 500 company with more than 80 years of history in acetylating cellulose and wood fiber.

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