

Townsend Additions Engineered Installation Instructions

For all installation methods:

Inspect all materials carefully before installation. Wood is a natural product and will contain variations in grain and color in each board. Warranties do not cover materials with visible defects once they are installed. Always add at least 5% to order quantities to allow for waste.

It is the responsibility of the installer/owner to determine if the jobsite conditions are environmentally acceptable and that the sub-floor system is acceptable for the installation of wood flooring. Maxwell Hardwood Flooring declines any responsibility for wood floor failures or problems resulting from sub-floor/sub-surface structural, environmental, jobsite damage or deficiencies after hardwood flooring has been installed.

Before Installation:

The wood floor must be installed after all sheetrock, painting, and tile are installed and dry. The HVAC system should be

operating during and after the installation to maintain a relative humidity of 35% - 55%.  IF THE RELATIVE HUMIDITY IS NOT CONSISTENTLY KEPT BETWEEN 35% -55% THE TOWNSEND ADDITIONS WARRANTY WILL BE NULL AND VOID.



For a **Hickory** installation, inspect the moisture levels upon delivery.

Due to Hickory's cellular structure (density), it can be more susceptible (than oak) to expansion and contraction because of changes in relative humidity.

A relative humidity target between 35%-55% must be identified. This RH factor will be different for many areas of the world. The goal is to find a relative humidity target that can be maintained throughout the installation process and beyond. It is important to stay within 5% of target RH continually. Relative Humidity is harder to maintain in a vacated home.

The acclimation process for this flooring is EXTREMELY IMPORTANT. Before installation, the flooring should be placed inside and allowed to reach an equilibrium moisture content that is contingent upon the relative humidity target. The flooring should be moisture tested periodically to determine equilibrium. This process usually takes several weeks but can be longer depending on the environment.

Sub-Floor: All sub-floors should be clean, dry, flat, and structurally sound.

Clean: Use the Rotary Sander w/12 grit disc sandpaper to remove paint, sheetrock mud, wax, oil, old adhesive, and scarify the concrete. Vacuum or sweep thoroughly.

Dry: Test a concrete sub-floor with a concrete moisture meter or a Calcium Chloride Kit. Check the floor in several locations. Follow the moisture meter manufacturer's guidelines for acceptable concrete moisture. Example: Tramex Concrete Encounter= anything over a 4.5 reading. Relative humidity test using Situ probes over 75%, Calcium Chloride ASTM-1869 reading over 3 lbs. will need a moisture barrier.

A wood sub-floor should have no more than a 14% moisture content and no more than a 4% difference between the sub-floor and flooring.

Flat: All sub-floors should be flat to within 3/16" in 10 feet radius. All leveling compounds should be a Portland base. Follow manufacturer's guidelines.

Structurally sound: All concrete sub-floors should have a minimum compressive strength of 3000 PSI. All wood sub-floors should be a least 3/4" thick and have No Deflection. APA rated CD Exposed 1 plywood and OSB Exposed 1 sub-floor panels are appropriate sub-floor materials. Particle board of any type or size is NOT acceptable as a sub-floor. Note NWFA nailing schedule. When applying plywood/OSB to concrete as a sub floor:

- 3/4" plywood/OSB may be glued to the concrete with a quality urethane adhesive
- 3/4" plywood/OSB may be shot down with a powder charged concrete nail gun or a pneumatic concrete nail gun. Note: NWFA nailing schedule.

Nail/Staple Down Installation:

Tools: Rotary Sander- 12 grit disc sandpaper- Hammer-Power Saw- Hand Saw-Tape Measure-Moisture Meter(wood, concrete, or both) Rubber Mallet- Chalk Line- Compressor and Hose- Use a mechanical or pneumatic wood floor nailer/stapler designed for 5/8" flooring. Use 1 1/4" – 1 1/2" flooring cleats or staples.

- The floor should be installed so that there is a 1/2" expansion space between the flooring and all vertical surfaces. This will require under cutting doorjamb, installing shoe-mold, quarter round, and/or wall base to cover the 1/2" expansion gap.
- Choose a starting wall according to the most aesthetically or architecturally important elements in the room, taking into consideration fireplaces, doors, cabinets, and transitions, as well as the squareness of the room. The starting wall will often be the longest unbroken wall in the room.
- Cover the sub-floor with 15 pound asphalt saturated felt or "Aquabar B" moisture retarder paper.
- Snap a working line parallel to the starting wall, 18" plus the width of the flooring, plus the tongue and 1/2" expansion space. Nail a starter board along the working line and begin the installation.
- Start installing the flooring with the groove side facing the starter board.
- Install from several cartons to insure a good color, shade, and random length mix.
- Distribute lengths (rack the floor) avoiding "H" patterns, "Stair Step" patterns, and other discernable patterns in adjacent runs. Stagger end joints of boards row to row a minimum of 6" for 2 1/4" strip flooring, 8-10" for 3-5" plank and 10" for planks wider than 5".
- Nail/staple every 4-6" with a nail/staple 2" from the end joints. Note: NWFA nailing schedule.
- Once the room is finished remove the starter board and hand nail or top nail the final rows.
- Sand and finish the floor according to NWFA guidelines.

Glue Down Installation:

Adhesive: Use a high quality urethane adhesive. Follow the adhesive manufacturers guidelines for 5/8" engineered flooring (trowel size/spread rate). Note: If a moisture barrier is needed, use the same brand as the adhesive to maintain the adhesive manufactures moisture warranty.

Tools: Rotary Sander-12 grit disc sandpaper-Hammer-Power Saw-Hand Saw-Tape Measure-Moisture Meter (wood, concrete or both) Rubber Mallet-Chalk Line-Adhesive Manufacturers recommended trowel.

- The floor should be installed so that there is a 1/2" expansion space between the flooring and all vertical surfaces. This will require under cutting doorjamb, installing shoe-mold, quarter round, and/or wall base to cover the 1/2" expansion gap.
- Chose a starting wall according to the most aesthetically or architecturally important elements in the room, taking into consideration fireplaces, doors, cabinets, and transitions, as well as the squareness of the room. The starting wall will often be the longest unbroken wall in the room.
- Snap a working line parallel to the starting wall, the width of the flooring, plus the tongue and 1/2" expansion space. Nail a starter board along the working line and begin the installation.
- Working away from the starter board, spread enough adhesive so that you can install the flooring without the adhesive setting up. (usually 36") Lift a plank periodically to check adhesive transfer. Check the adhesive manufacturer's guidelines.
- Start installing the flooring into the adhesive with the tongue facing the starter board.
- Install from several cartons to insure a good color, shade, and random length mix.
- Distribute lengths, avoiding "H" patterns, "Stair Step" patterns, and other discernable patterns in adjacent runs. Stagger end joints of boards row to row a minimum of 6" for 2 1/4" strip flooring, 8-10" for 3-5" plank, and 10" for planks wider than 5".
- A premium grade clean release tape may be used to hold the flooring in place until the adhesive has cured.
- Once the room is finished, remove the starter board and install the final row.
- The floor may be sanded and finished when the adhesive has cured. Check the adhesive manufacturer's guidelines.

Floating Installation:

There is the occasion when glue-down or nail-down installations will not work because of sub-floor problems such as "Light Weight Concrete". "Light Weight Concrete" has a low compression strength and will not hold a concrete nail or the shear strength of a glue-down floor. To test for "Light Weight Concrete" draw a nail across the surface. If it leaves an indentation or powders easily, a Floating Installation is recommended.

Tools: Floor Scrapper- Hammer-Power Saw-Hand Saw-Tape Measure-Moisture Meter (wood, concrete, or both) Tapping Block-Rubber Mallet-Chalk Line-A premium PVA carpenters white glue

- Use 5" or wider plank flooring for floating installations.
- The floor should be installed so that there is 1/2" expansion space between the flooring and all vertical surfaces. This will require under cutting doorjamb, installing shoe-mold, quarter round, and/or wall base to cover the 1/2" expansion gap.
- Chose a starting wall according to the most aesthetically or architecturally important elements in the room, taking into consideration fireplaces, doors, cabinets, and transitions, as well as the squareness of the room. The starting wall will often be the longest unbroken wall in the room.
- Cover the sub-floor with 15 pound asphalt saturated felt or "Aquabar B" moisture retarder paper.
- To reduce the hollow sound of a floating floor, add a high-density acoustical underlayment pad with at least a 58 IIC/STC rating.
- Start installing the flooring along the starter wall with the groove side facing the wall.
- Install from several cartons to insure a good color, shade, and random length mix.
- Distribute lengths (rack the floor), avoiding "H" patterns, "Stair Step" patterns, and other discernable patterns in adjacent runs. Stagger end joints of boards row to row a minimum of 18-20".
- Run a bead of PVA glue along the bottom of groove on the end joints and lay up the first row. Use 1/2" spacers to maintain the 1/2" expansion space along the starter wall and end walls.
- Run a bead of PVA glue along the end groove and side groove. Lightly tap the planks in place using a tapping block against the tongue. Continue this technique until the floor is finished.
- As you finish each row, place 1/2" spacers at the wall or any vertical surface.
- Clean excess PVA glue with a clean damp rag as you install the floor.
- Allow 24 hours for the PVA glue to cure before sanding and finishing.
- Sand and finish the floor according to NWFA guidelines.

Radiant Heat Installations:

With radiant heat, the heat source is directly beneath the flooring, so the flooring may dry out faster than a similar floor in a home with a conventional heating system. Wood flooring can be installed over radiant heat as long as you understand radiant heat and how it can impact wood flooring, what precautions to take.

- The maximum temperature of sub-floor under normal use should not exceed 80 degrees F.
- Heating pipes must be covered with 1 1/4" of concrete or a minimum of 1/8" below the bottom of the plywood sub-floor.
- Before the installation of the hardwood flooring, the heating system must be operated at a normal living temperature for at least 14 days. One or two days before the installation, the heating system must be turned off.
- Follow the floating installation instructions.
- Be sure the high-density acoustical underlayment is suitable for radiant heat flooring systems.
- Radiant heat is a dry heat. A humidification system may be necessary to maintain wood flooring comfort zone.
- Expect some heating season shrinkage.

For Best Results, we suggest using a National Wood Flooring Association Certified Professional. A list of active NWFA Certified Professionals in your area can be found online at woodfloors.org/certified-professional-search.aspx