

## Solid Flooring Installation

### START INSTALLATION

- Staple/Nail-Down Installation
- Glue-Down Installation



Depending on the sub-floor and personal preference, solid flooring can be installed using nail/staple-down or glue-down methods. Allwood solid flooring includes all the wood species that Allwood offers in the Solid Collection, and solid bamboo in Classic and Strand Collections. Solid flooring can be installed on or above grade level.

### Staple/Nail-Down Method

#### STEP 1: Establish a Starting Point

- Installation parallel to the longest wall is recommended for best visual effects, however, the floor should be installed perpendicular to the flooring joists, or perpendicular to the solid subfloor boards. Find appropriate subfloor from "Subfloor Type" section in this instruction manual.
- With frame construction, mark location of joists on perimeter walls so that starting runs and finishing runs, which require face nailing, can be nailed into joists.
- When  $\frac{3}{4}$ " solid flooring is laid parallel with the floor joists, or when solid flooring is less than  $\frac{3}{4}$ " thickness, add a layer of minimum  $\frac{1}{2}$ " (15/32") CD Exposure 1 (CDX) plywood underlayment to the existing subfloor.
- Pre-plan the floor by counting the number of planks (in width) that it will take to complete the floor. Avoid finishing out with a rip narrower than 2". Plan to start the first row with a partial board, ripping it to the necessary width to avoid a narrow rip on the final wall.

#### STEP 2: Installing Vapor Retarder

- Before installing the floor, use a vapor retarder. Some examples of acceptable vapor retarders over wood subfloors include:
  - An asphalt laminated paper meeting UU-B-790a, Grade B, Type I, Style 1a.
  - Asphalt-saturated kraft paper or #15 or #30 felt that meets ASTM Standard D4869 or UU-B-790, Grade D.
  - Cover the subfloor with a good grade of #2 vapor retarders. Extend the felt/building paper completely to the walls and fasten the felt to the subfloor.

#### STEP 3: Installation of Flooring

Allwood recommends a Center Line Out installation, especially when spacers are needed. Start in the middle of the room and install out towards the walls. Wall Line Layout is also acceptable.

#### Center Line Layout

- Find the center of the room, measuring off the two longest walls, and snap a line down the center of the room.
- Install a starter board on the line. Fasten the starter board to the floor using wood screws.
- Nail the first row of wood flooring against the starter board, being careful not to move the starter board when nailing. The groove of the flooring should be against the starter board.
- Use a blind nailer to install the remaining rows of wood flooring.
- After installing in one direction, remove the starter board and begin installing rows in the opposite direction.

- Install a spline or a slip tongue in the groove of the board that was against the straightedge. Put wood flooring adhesive down the entire length of the groove before installing the splines.
- Install the spline using a blind nailer. To keep the spline in alignment for the next flooring board, use a scrap piece of wood flooring to run along the length of the spline as you nail.

### **Wall Line Layout**

- In at least two places 12"-16" from the corner, measure out equal distance from the starting wall and snap a chalk line. The chalk should be of a bright color so that it is visible through vapor retarder. If a partial, ripped board is required (as above) it can be installed after the balance of the flooring has been completed.
- Adjust the starting line to allow for the width of the board plus 3/4" for expansion. As a general rule, a 3/4" expansion space must be left around the perimeter and at all vertical obstructions.
- Ascertain that the wall is straight. If it is not, scribe the first row to allow for irregularities.
- Lay one row of plank along the entire length of the working line. The groove should be facing the starting wall.
- Top-nail and blind-nail the first row (hand-nail if necessary). Solid strand flooring may need to be pre-drilled before nailing due to its extreme hardness. Each succeeding row should be blind-nailed wherever possible.
  - Typical: Blind-nail through the tongue using 1½" to 2" fasteners. Use 1½" fasteners with ¾" plywood subfloor direct to concrete slab. Face-nail boards where needed using 6d-8d casing or finish nails.
  - Typical: Space blind-nailing every 6"-8"; space face-nailing every 10"-12".
- Add each additional row of flooring. Distribute lengths, avoiding "H" patterns and other discernible patterns in adjacent runs. Stagger end joints of boards row to row a minimum of 6 inches.
- During installation of flooring pieces, push or gently tap boards flush to the previous row. Tap against the tongue; tapping the groove may damage the edge. To prevent damage to the finish, avoid tapping the face of the board with a rubber mallet. Note that Allwood engineered floor collections are purposely designed with tight tongue and groove connections for better hold-in-place during installation.
- At the finishing wall and other obstructions, it may be necessary to blind-nail by hand until top nailing is required.
- To minimize expansion on floors wider than 20 feet, more or less spacing between rows may be needed, depending on the flooring MC at the time of installation, the geographical area, interior climate control and time of the year.
- Where spacing is required: Use a washer or removable spacer to leave additional space every few rows and/or start in center of room and work out to both sides. Do not use spacers that may cause damage on the floor products.
- Blind-nail, face-nail or use wood floor adhesive, as necessary, to complete the final rows.

### **Glue-Down Method**

See **Glue-Down Method** under **Engineered Flooring Installation** section in this manual.

### **Solid Flooring Installation Addendum**

#### **Installation**

- Do NOT install Allwood solid flooring if the moisture content (MC) of the wood and the MC of the subfloor have more than 2% difference. The Flooring and the Subfloor must be acclimated at normal living conditions until the MC in each are within 2%.
- If installation occurs during a heating season when the humidity of the interior is low, and the flooring is acclimated at this condition to a lower MC in the yearly EMC range:
  - Allwood recommends the use of removable spacers every few rows. Estimate the maximum expansion potential using the equation in the NWFA Installation Guideline to

- decide how many spacers should be used. Do not use spacers that will damage Allwood Solid Flooring
- Allwood recommends the use of cleats over staples. Cleats do not hold as tight as staples and can allow some extra movement if needed.
- When installing solid flooring over concrete, a vapor retarder is always required over the concrete slab and below the subflooring material. A minimum 6 mil construction grade polyethylene film, with perm of .13, or other impermeable material with a perm of .15 or less is recommended.

### Acclimation

- Thermal Acclimation
  - The first step in acclimation is to bring the temperature of the wood to that of its environment.
  - Thermal Acclimation can be done in original packaging.
  - With large temperature swings it is important to slowly and gradually bring the wood to living temperatures. Suggested rate is about 10°F per day. Cold wood into a warm house or hot wood into a cool house can shock and traumatize the wood causing irreversible damage. This process may take 3-5 days on average.
- Moisture Content (MC) Acclimation
  - Remove the wood from packaging, and rack out on floor or stickers to allow for proper acclimation.
  - Acclimate until the MC of the flooring has reached targeted MC, which is about 1/3 to 1/2 of EMC control range from the lower end, and within a 2% MC range of the subfloor. It may take days, weeks or months, depending on the target MC. Allwood solid flooring has average 7% MC ex-factory.
  - When acclimating the flooring, interior temperature and humidity must be set to occupied conditions. In most geographic locations, during most of the year, exterior conditions are either too humid or too dry. So **acclimating under such conditions is counterproductive and may cause serious damage to the flooring.**

### References:

This Allwood Installation Instruction Manual is created based on the National Wood Flooring Association (NWFA) Installation Guidelines (updated Sept, 2012). These guidelines by NWFA are regularly reviewed by a committee of industry experts, offering industry-accepted standards for hardwood flooring techniques. Follow NWFA Installation Guidelines if any of the instructions in this manual differ or conflict from the former. Contact your local distributor if you need a copy of the guidelines.