



L.W. MOUNTAIN HARDWOOD FLOORS INC

## **L. W. Mountain, Inc.**

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### **Engineered Wood Installation Guidelines**

Wood is a natural product and will vary in shade or pattern definition. Also, just like solid wood, Engineered flooring is subject to the normal behavior of minor expansion during periods of high humidity and minor contraction during periods of low humidity (usually the heating season). Visible gaps at seams and joints will vary seasonally.

NOTE: Manufacturer disclaims all liability for imperfect installation of its product. Engineered pre-finished flooring is installed using one of the following methods:

- \* Floating method
- \* Glue down method
- \* Staple down method

Engineered flooring can be installed below grade using this method.  
Engineered can be applied over in-floor radiant heating systems.

Our flooring should be one of the last items installed in any construction or remodel project. All work involving water/moisture should be completed before the flooring installation. Water and wood do not mix. Installing flooring onto a wet subfloor will most likely cause cupping, tip & edge raising, telegraphing of core and subsequent gapping.

Permanent HVAC should be on and operational and maintained between 65-75 degrees Fahrenheit with relative humidity of 35%-60% for a minimum of 3 days prior to delivery, as well as during and after installation of the flooring. Humidity levels below 35% will most likely cause movement in the flooring, including gapping, possible cupping and cracking/checking on the floor face material. Installation of L.W. Mountain engineered flooring in areas where the relative humidity may go below 35% and when humidification equipment is not used continuously to keep humidity above 35% in the space will void all warranties.

Store engineered flooring in the UNOPENED boxes at installation area for a minimum of 48 hours before installation to allow the flooring to adjust to room temperature and humidity levels. Do not store the boxes of flooring directly on concrete. Our engineered floors DO NOT need any moisture equalization prior to installation from open boxes and should be installed from just-opened boxes. DO NOT OPEN more than a few boxes in advance of installation and only the number of boxes that will be installed within the next couple of hours. Only open enough boxes to ensure a good mix of color.

### **PRE-INSTALLATION SUBFLOOR REQUIREMENTS:**

Acceptable subfloor types:

- CDX plywood - at least 5/8" thick for joist spacing up to 16" on center, minimum 3/4" thick for joist spacing greater than 16" on center (19.2" maximum)
- Underlayment grade particleboard (minimum 40 lb. density)
- OSB - at least 3/4" thick, PS 2-92 rated or PS 1-95 rated
- Concrete slab
- Existing wood floor - must be smooth, level, well-adhered
- Ceramic tile

## Resilient tile & sheet vinyl

### CONCRETE SUBSTRATE PREPARATION:

Concrete is required to be sound, smooth, level and flat with a maximum variation of 1/8" in 10'. Fill any low spots with appropriate filler and scrape any high spots. Subfloor must be properly cured and tested for moisture content. Before moisture testing begins, the concrete slab must be a MINIMUM of 30 days old. Testing of slabs less than 30 days old can produce inaccurate, unreliable results; PH testing should be done on all slabs regardless of age. The recommended method is the Calcium Chloride test and flooring must not be installed if vapor pressure exceeds 3 lbs. per 1000 square feet in 24 hours. If underlayment besides 2n1 Foam is being used (ie. 1/4" Cork, rubber, sound deadening), Before installing the floating floor, cover concrete floor with 6 mil polyethylene sheets, overlap seams 8", and tape the sheets together.

## Installation

### Floating Method

Maximum room dimensions for a floating floor are 40ft. across the boards or 120 ft. lengthwise. Floors exceeding either of these dimensions require use of "T-Molding." A minimum of one butt seam is required in every row, regardless of width (e.g. hallways).

*Never attach any permanent object through the flooring, affixing it to the subfloor. A float-in floor must be free to expand and contract in all directions.*

#### Step 1

Layout 2n1 underlayment foam or 6 mil. Plastic & sound deadening underlayment.

#### Step 2

Start in corner and lay first row from left to right, with tongue sides toward wall. Proper expansion space can be achieved by pulling floor away from wall once first three rows have been installed.

#### Step 3

Hold next board against first board at approx. 45° angle and lay flat on floor. Continue in this manner for entire first row.

#### Step 4

Cut end board in first row to correct length and start second row with left-over piece(if possible). End joints must be staggered by at least 12" . Butt seam must be placed in each row regardless of width,e.g. hallways.

#### Step 5

Hold board at approx. 45° angle to board in front. Press forward to engage joint and lay flat on floor.

#### Step 6

Engage short end of new board. Lay flat keeping long side in line with groove of adjacent board.

#### Step 7

Using tapping block, carefully tap long edges together until they are closed. DO NOT tap too hard or over-engage. Never tap directly against wearlayer. Continue this process until you reach the end wall.

#### Step 8

Saw last board to correct width. Place last board on top of second-to-last board. Mark board with help of piece of board without locking edge. Use floor pull bar and mallet to click the long side of planks.

**NOTE:** If boards cannot be easily angled under door frame (or similar), do the following: cut away locking edge, then apply Floating Floor Adhesive and install board.

### Staple Down Method

*Note: For use with traditional Tongue & Groove only*

A. Before installing wood flooring, place an approved vapor retarder. Some

examples of acceptable vapor retarders over wood subfloors include:

1. An asphalt laminated paper meeting UU-B-790a, Grade B, Type 1, Style 1a.
  2. Asphalt-saturated kraft paper of #15 or #30 felt that meets ASTM standard D-4869 or UU-B-790, Grade D
  3. Red Rosin Paper
- B. Factory finished engineered flooring should be installed perpendicular to joists or on a diagonal for any single layer subfloor (exceptions: Over diagonal, solid subfloor boards, install perpendicular to joists or subfloor direction.)
- C. Wall Line Layout

1. 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.
2. Snap a working line parallel to the starting wall, allowing a  $\frac{3}{4}$  inch expansion space between the starting wall and the edge of the first strip or plank run.
3. As a general rule, a  $\frac{3}{4}$  inch expansion space must be left around the perimeter and at all vertical obstructions.
4. Random-width plank is laid out with alternating courses varying by widths. Start with the widest board, then the next width, etc, and repeat the pattern.
5. Lay one row of strip or plank along the entire length of the working line.
6. Top-nail and blind-nail the first row (hand-nail if necessary), using appropriate fasteners. Denser species may require pre-drilling. Each succeeding row should be blind-nailed with the nailing machine whenever possible. At the finishing wall and other obstructions, it may be necessary to blind-nail by hand until top nailing is required.
7. Racking rule of thumb: Stagger end joints in adjacent rows at least three times the width of the boards, as product allows. Avoid H-joints. See figure A-1.
8. To minimize expansion on floors wider than 20 feet, more or less spacing between rows may be needed, depending on geographical area, interior climate control, and time of the year.

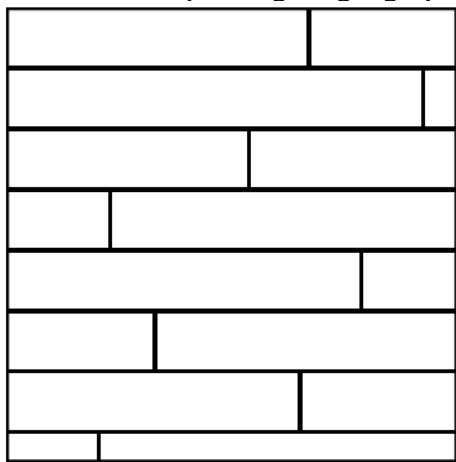


Figure A-1: Acceptable

9. 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 factory-finished products.
10. Nailing: Blind-nail through the tongue using  $1\frac{1}{2}$ "
11. Use staples designed by your stapler manufacturer to correspond to the thickness of the flooring. Fasteners should be spaced every 6-8 inches on blind-nailing, or every 10-12 inches on face-nailing.
12. Blind-nail and face-nail, as necessary, to complete the final rows.

Remember that all walls and other vertical structures in the room must have a  $\frac{3}{4}$  inch expansion space left between it and the floor. If your drywall stops at least  $\frac{3}{4}$ " above the floor, the thickness of the drywall can be considered part of the  $\frac{3}{4}$ " expansion space requirement.

- Once the floor has been completed the base and the quarter round can be reinstalled into the room. This will cover the expansion gaps left between the wall and the floor.
- Sweep or vacuum the floor using a soft brush attachment.
- Finish by cleaning the floor with an approved hardwood floor cleaner.
- Enjoy your new hard wood floor.

## Glue Down Method

- LW Mountain recommends **moisture testing**, the use of **moisture barriers** and **100% urethane wood flooring adhesives**
  - To ensure glue transfer, glue manufactures recommend rolling the flooring throughout installation using an **85-100 lb roller**
  - For the best result, do not mix adhesive products. Use moisture barriers and adhesives from the same manufacturer's product line.
  - Use the trowel size recommended by the adhesive company to get required spread rate and ridging height. Typically, trowel size is determined by board type, size and surface texture. (Ensure a 95% min glue-to-board glue transfer).
  - During constant use trowel teeth will wear down. For best glue coverage use a new trowel with each new container of adhesive.
  - Discard twisted or warped boards.
  - Follow the glue manufacturer's labeling instructions regarding adhesive set time, correct trowel size, removal of surface sealers or contaminants and use of moisture barriers.
  - Intermix product from several cartons as you install the floor to insure color, grain and shade mix.
  - Install the flooring parallel to the longest wall in the room. Keep the flooring straight using a chalk line.
- Blue painter tape #2080** can be used to keep rows or sections of floor boards together until the adhesive has cured. (incorrect tape can harm the finish.) Tape together 4 or 5 rows at 18" intervals.

Many installers choose to use straps or clamps in an effort to force board rows tighter together during installation. Be aware that **over-strapping** may adversely affect the floor and can result in glue-bond failure, seam peaking, twisted boards, or out-of-square flooring board alignment. Lumber Liquidators does not recommend strapping bamboo.

**Cured adhesive can cloud, chemically damage or etch the floor's finish. Clean fresh adhesive from the surface of the floor frequently with mineral spirits or manufacturer-recommended remover. Use clean towels, changing frequently to prevent haze and adhesive residue.**

### Step 1

**(1)** Determine the starting wall, usually the longest foundation wall. At the two opposite ends of this wall, measure out and mark on the floor the width of several rows of boards, (this could be 12" to 24") include the expansion gap.

**(2)** Next, use a chalk line to connect the two marks. Follow this chalked line when applying both the adhesive and boards. **THE FIRST ROWS MUST BE STRAIGHT.**

**(3)** Using an approved trowel and wood flooring adhesive, glue the first few rows in the dry area, between the wall and chalk line.

(4) First row only. Using a table saw remove the tongue part, then place the tongue side towards the wall with groove side facing outwards. Lay flooring into the adhesive following the straight line. Stay off the new hardwood while working.

(5) Progressively lay-in the next boards by engaging the tongue and groove then drop board into adhesive. Avoid dragging or sliding boards together as this can trap or squeeze glue up in between the boards creating gaps. Continue working 4 or 5 rows together, then measure and cut the last boards as needed to complete the rows.

(6) The balance of a board cut is used to start a new row, discard lengths under 6". Avoid clustering of end joints. Stagger the ends of the boards correctly. Smaller boards should be intermixed throughout the installed floor. A tapping block can be used to gently tap the boards into proper position. During installation, end gaps between boards can be minimized by temporarily locking a completed row in place by using spacers placed between the wall and the last board of each row, remove when glue has dried.

(7) Repeat the process. Chalk new lines, spread adhesive and continue working 4 or 5 rows together until completed.

## **INSTALLING THE LAST ROW**

### **Step 2:**

- Most often, the entire length of the last row will need to be trimmed so that it is narrow enough to fit the remaining space. It should be glued and wedged into place. Leave all spacers in the expansion space until the adhesive has cured, then remove. Keep the floor free from foot traffic, until adhesive has cured.
- Be sure not to spread adhesive too far ahead of your work area.
- If the adhesive skins over and fails to transfer, remove and spread new adhesive to achieve proper bonding to the subfloor. Occasionally lift a board and check for adhesive transfer. Adequate adhesive transfer is necessary to ensure sufficient holding strength.
- When not in use, keep the adhesive container tightly closed to prevent thickening and difficulty in spreading the adhesive. Proper ventilation within the room should be provided. Follow the recommendations on the adhesive container.

### **Post-installation**

- After installation, allow glue to fully cure for 24 hrs before replacing furniture and foot traffic.
  - For matching milling and finish sheen, save a box of flooring in case of future repairs.
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## **Please Read Summary information for ALL applications**

In-floor Radiant Heat: With radiant heat, heat source is directly beneath the flooring, so flooring may gain moisture or dry out faster than in a home with conventional heating system. For this installation, once slab has cured, turn heat on, regardless of season, and leave it on for at least 5-6 days before installation. Maximum surface temperature should never be more than 85 degrees Fahrenheit (30 degrees Celsius).

Prefinished 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 masonite, cardboard, or rosin paper and Blue Tape to hold the rosin paper to the floor (other tapes may damage the finish). Clean the floor thoroughly before laying the rosin paper to ensure that no debris is trapped underneath. DO NOT USE plastic film or other non-breathing coverings as this can cause the floor to become damaged from humidity buildups.