

CHAPTER 9

SOLID STRIP AND PLANK FLOORING INSTALLATION

Part I - Acceptable Jobsite Conditions and Jobsite Checklist

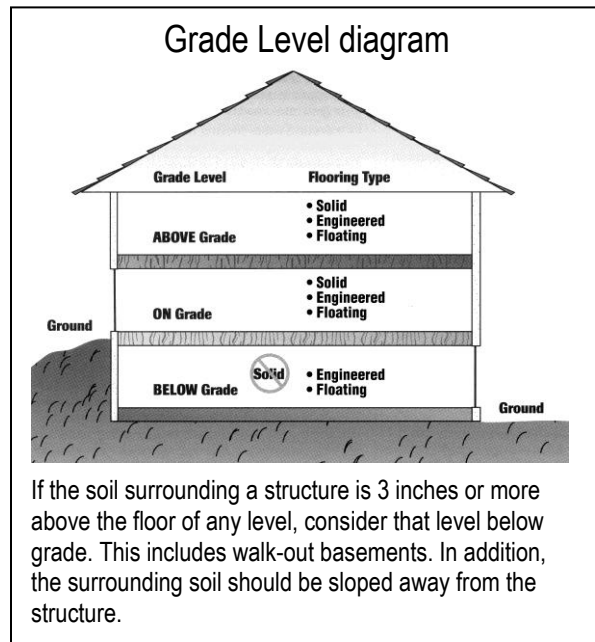
A. Refer to Chapter 1

Part II - Acclimation Guidelines

A. See Chapter 2 and Appendix B.

Part III – Appropriate Grade Levels

- A. Solid strip and plank wood floors can be installed successfully above grade level or on grade, but are not recommended for installation below grade.
- B. The entire flooring level is considered to be BELOW GRADE where soil is present along any perimeter wall and is more than 3” above the installed wood flooring level. Ground should be sloped away from the house for proper drainage. (Follow local building codes.)



Part IV - Subfloors – Wood Joist Systems

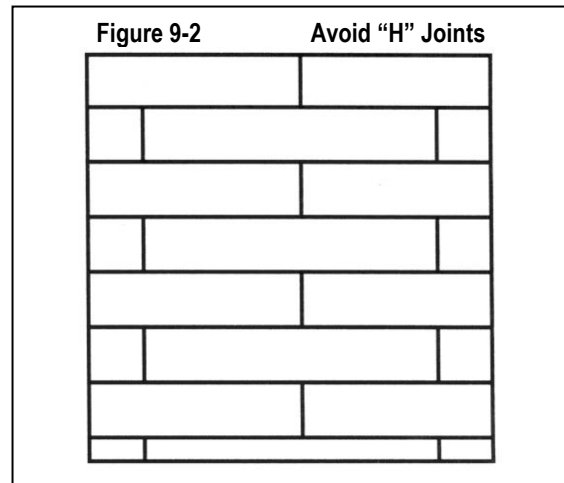
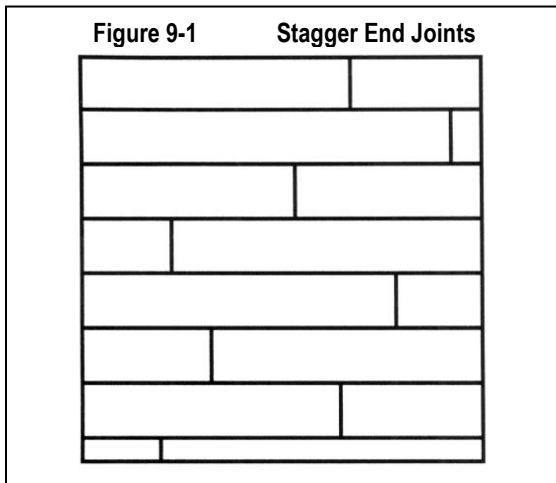
A. See Chapter 4.

Part V - Subfloors – Concrete Slab

- A. See Chapter 5.
- B. When installing solid strip and solid plank 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.
- C. Some manufacturers allow direct glue installation of $\frac{3}{4}$ ” solid strip and solid plank flooring. In such cases, follow manufacturer’s recommendation.

Part VI – Solid Strip & Plank Installation Methods

- A. Always follow the manufacturer's recommended installation procedure.
- B. Unfinished and factory-finished solid strip and solid plank flooring should be installed perpendicular to the joists or on a diagonal for any single layer subfloor. (Exception: Over diagonal, solid subfloor boards, install perpendicular to joists or subfloor direction.)
- C. When $\frac{3}{4}$ " solid strip and solid plank flooring is laid parallel with the floor joists, follow one of these two steps:
 - 1. Add a layer of minimum nominal $\frac{1}{2}$ " (15/32") CD Exposure 1 (CDX) plywood underlayment to the existing subfloor (as previously recommended)
 - 2. Or brace between truss/joists in accordance with the truss/joist manufacturer's recommendations and with local building codes. Some truss/joist systems cannot be cross-braced and still maintain stability.
- D. 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 I, Style 1a.
 - 2. Asphalt-saturated kraft paper or #15 or #30 felt that meets ASTM Standard D-4869 or UU-B-790, Grade D.
- E. 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 $\frac{3}{4}$ " expansion space between the starting wall and the edge of the first strip or plank run.
 - 3. As a general rule, a $\frac{3}{4}$ " 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 wherever 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: Avoid "H" patterns. Stagger end joints of boards row to row a minimum of 6" for strip flooring, 8-10" for 3" to 5" plank, and 10" for plank wider than 5". See Figures 9-1 and 9-2.
 - 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. (Appendix B, Acclimation.)



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 1½"-2" fasteners. Use 1½" fasteners with nominal ¾" plywood subfloor direct to concrete slab. Face-nail boards where needed using 6d-8d casing or finish nails. Fasteners should be spaced every 6"-8" on blind-nailing, or every 10"-12" on face-nailing.
11. For additional fastening, any of the following options may be used in addition to the nailing schedule. (See Appendix F, Fastener Schedule.)
12. Follow manufacturer's instructions for installing plank flooring.
13. For wide-width plank flooring (5" or wider), to assist the nailing schedule of 6"-8" and increase holding power, there are three options.
 - a. Screw and plug at end joints, alternating at staggered locations and intervals along each board.
 - b. Apply an approved wood flooring adhesive.
 - c. Use kerfing or relief cuts every 8" to 12" parallel to the grain – using more relief cuts for wider boards. Typically, the relief cut should be 3/8" on a ¾" board.

NOTE: These options, however, will not necessarily eliminate cupping.

14. Blind-nail and face-nail, as necessary, to complete the final rows.

F. Center Line Layout

NOTE: For instructions on using the trammel point method to square a room and find the center point, see Appendix G, Trammel Point Method.

1. Find the center of your room, measuring off the two longest walls, and snap a line down the center of that room.

2. Install a starter board on the line. Fasten the starter board to the floor using wood screws.
3. 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.
4. Drill and hand-nail the first three rows through the tongue. **DO NOT USE TOP NAILS.**
5. Use a blind nailer to install the remaining rows of wood flooring. Use the nailing practices described earlier in the chapter.
6. After installing in one direction, remove the starter board and start rows going in the opposite direction.
7. Install a spline or a slip tongue in the groove of the board that was against the straight-edge. Put wood flooring adhesive down the entire length of the groove before installing the spline.
8. 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.
9. Install the remaining rows in the opposite direction. Use the nailing practices described earlier in the chapter.