

Engineered Multiply Flooring Installation Instruction

INSTALLER AND OWNER RESPONSIBILITY

- Inspect ALL materials carefully BEFORE installation. Warranties & Claims DO NOT cover materials with visible defects once they are installed. It is the responsibility of the installer to determine if the job site sub-floor and job site conditions are environmentally and structurally acceptable for wood flooring installation. We can't accept any responsibility for job failure resulting from and associated with sub-surface or job-site environment, climate and deficiencies.
- The installer and home owner has the final responsibility to inspect as to the condition of the products including quality, finish, and whether it is the correct product ordered (type, quantity, color, grain, size.) Do not install if the flooring is not acceptable. He must use good judgment and reasonable selectivity and hold out or cut off pieces with visible defects whatever the cause. Flooring with obvious defects or imperfections should be trimmed and used in hidden places or discarded. We will not, in any case, be liable for installer's lack of judgment, quality of installation, labor, installation, and associated costs. Should any boards be un-acceptable, and need to be returned, exchanged or replaced for any reason, contact your supplier immediately. Once installed, the floor is considered as having been accepted by the owner and installer.
- Hardwood flooring is a product of nature and therefore, not perfect nor identical in grains or color and defects in the flooring can occur in the manufacturing process or naturally as a characteristic of the wood. Our products are manufactured in accordance with accepted industry standards which permit defects for up to 5%. Order 5% additional material above actual square footage of the installation to allow grading and cutting of the wood.
- The use of color coordinated wood floor putty to cover small cracks and gaps should be considered normal in hardwood flooring installations.

JOBSITE CONDITIONS & PRE-INSTALLATION PLANNING (Requirements)

- The building must be structurally completed and enclosed. All outside doors and windows must be in place and have latching mechanisms. All concrete, masonry, plastering, drywall, and paint must also be completed, allowing adequate drying time as to not raise moisture content within the building. All texturing and painting primer coats should be completed.
- HVAC systems must be fully operated at least 14 days prior to flooring installation, maintaining a consistent room temperature between 60-80°F and relative humidity between 35-55% and should remain at this level year round. This is not only stabilizes the building's interior, environment, but also is essential when acclimating hardwood flooring to the job site. Wood is a hygroscopic material that expands and contracts depending on the relative humidity level of the environment. Flooring must be stored in a climate controlled area, which is equal to the environment it will be installed 5-7 days prior to the installation, but DO NOT OPEN the carton until you are ready to install.
- Exterior grading, directing drainage away from the structure, as well as gutters and down-spouts should also be completed. Floors may be installed on, above, or below grade level and are not recommended in full bathrooms.
- It is essential that basements and crawl spaces are well ventilated and dry. Crawl spaces must be minimum of 24" from the ground to underside of joists. A vapor barrier must be established in crawl spaces using 6 mil polyethylene film with joists overlapped and taped.
- During the final pre-installation inspection, Subfloor must be checked for moisture content using the appropriate metering device for the wood and concrete.

Tips

- Work out of several different cartons at the same time to obtain the best distribution of color, grain and shade mixture.
- Undercut door casings to avoid difficult scribe cuts, and remove any existing wall base, shoe molding, quarter round or doorway threshold. These items can be replaced after installation, but should be replaced in such a way to allow at least 1/2" room for expansion. See NWFA Installation Guideline for details.

Subfloor Preparation:

All Subfloor must be;

- Clean, free of wax, paint, oil, plaster, debris. All previous or existing glues or adhesives must be removed before installation. #3 1/2 grit open coat paper may need to be used to grind a concrete sub-floor. This will loosen any dirt, loose concrete or contaminants. Sweep or vacuum thoroughly.
- Flat to 3/16" per 8' radius or 1/8" per 6' radius. If a sub-floor prep work is required, "hills" should be sanded down and the "valleys" filled with an underlayment patch. Subfloor irregularities and undulations may cause any wood flooring installation to develop hollow spots between the flooring and sub-floor. These hollow spots are NOT the result of any wood flooring manufacturing defect and are NOT covered by the warranty.
- Structurally sound and properly secured with nails or screws every 6" along joists to reduce the possibility of squeaking after installation. Nail or screw any loose areas that squeak or reveal movement and replace any damaged sub-floor or underlayments.
- Dry and should be covered, wall-to-wall, with 15lb asphalt saturated felt. Lap edges of this felt 4" when positioning it. Double the felt around heat ducts in the floor. It is essential that basements and crawl spaces are well ventilated and dry. Crawl spaces must be minimum of 24" from the ground to underside of joists. A vapor barrier must be established in crawl spaces using 6 mil polyethylene film with joists overlapped and taped. ALL sub-floors must be tested for moisture. See below for an appropriate moisture testing.

Acceptable sub-floors

- 5/8" minimum thickness, preferred 3/4" or thicker exterior plywood installed with long edges at right angle to floor joists and staggered so that end joints in adjacent panels break over different joists.
- 1" x 4" to 6" wide, square edged, kiln dried coniferous lumber, laid diagonally over 16" on center wooden joists. The ends of all boards are to be cut parallel to the center of the joists for solid bearing.
- 3/4" inch minimum O.S.B. on 19.2" center floor joists system properly nailed. When joist space is greater than 19.2", flooring may exhibit minimum performance. Adequate and proper nailing as well as soundness of the sub-floor should be ascertained.
- Concrete sub-floors must be at least 90 days old, clean, level, sound and of sufficient compression strength (3000 lbs. P.S.I.) being sure that the surface is not slick. Sections not level such as waviness, trowel marks, etc. are to be eliminated by grinding or the use of a leveling compound.
- Do not install over radiant heat system.
- Appropriate moisture test must be done prior to installation – Always document your readings.

Wood subfloors

Check the moisture content of both the sub-floor and the hardwood flooring with a quality calibrated pin moisture. Wood sub-floor must not exceed 12% moisture content, or 3% moisture content difference between hardwood flooring and sub-floor. If sub-floor exceeds this amount, the source of the moisture needs to be located and eliminated before installation.



Concrete Sub-floors

Testing with Moisture Meter

All concrete sub-floors can also be tested using a Delmhorst moisture meter, Tramex Concrete Encounter or Wagner Concrete meter. (Check floor in several areas). Test at each outside wall and 1-5 times in center area depending on the size of room for residential, and at each outside wall and every 6' in center area for commercial.

Testing without Moisture Meter

Polyfilm : One test per 200 sqf. (minimum 2 tests per jobsite)

Completely tape down 2'x2' polyfilm squares and leave them for 48 hours. Check for condensation under the plastic. Condensation indicates slab has moisture. Noticeable color changes indicates moisture.

Phenolphthalein : One test per 200 sqf. (minimum 2 tests per jobsite)

Chip small section of concrete off floor and apply 3% Phenolphthalein in alcohol solution (available at most druggists) in the area. Red color indicates moisture. ALWAYS chip concrete as this protects against the possibility that a concrete sealer was applied. Keep phenolphthalein out of direct sunlight. Average shelf life of Phenolphthalein is 6 months. If any of these tests indicate moisture is present in the slab, the calcium chloride test should be run.

Calcium Chloride Test : One test per 1,000 sqf. for 24 hours. See details for NWFA Moisture Testing Procedures.

If calcium chloride test resulted more than 3 lbs, or moisture is present, DO NOT install, find the source of moisture and correct it.

NAIL-DOWN INSTALLTION

Tools & Materials:

Hammer, Power saw, Chalk line, Flooring nails, Tape measure, 15 lbs. asphalt felt, Flooring cleaner, Moisture meter.

*** 15 lbs. asphalt felt is not considered a moisture barrier. Use of extra moisture barrier (6 mil polyethylene film minimum) may be required if necessary.**

Recommended Nail : Powernail (800-323-1653)

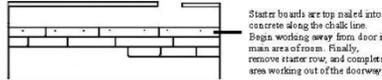
3-1/4" wide products : Model 200, 1-1/2", 20 gage, 85 PSI, U1 PAD with 1 SHIM.

5" wide products : Model 50P, 1-1/2", 18 gage, 85 PSI, .200 PAD with 2 SHIMS.
Model 200, 1-1/2", 20 gage, 85 PSI, U1 PAD with 1 SHIM.

- Any squeak and popping sound related issues after nail-down installation is not considered as manufacture defect and will not be covered by our warranties.
- Install flooring perpendicular to the joist in the direction of the longest dimension of the room.
- Measure this distance from the starting wall (in at least two places) close to the starting wall's opposite corners. Mark these points and snap a working chalk line parallel to the starting wall allowing the required expansion space between the starting wall and the edge of the first row of flooring.
- Align tongue of first row on chalk line with groove facing starter wall. To ensure a straighter starting row, use the longest pieces available. Leave a minimum of 1/2" expansion gap around all vertical obstructions. In large spans, more spacing may be needed depending on geographical area, interior climate control, and time of the year. Allowing 1/2" minimum expansion gap is critical. Wood expands and contracts with changes in humidity. Wood will buckle and/or cup if an adequate expansion gap is not provided. Always allow for expansion when making end or side cuts around vertical objects.



- On the first row of flooring, top nail 2" from each end and on 6" intervals. (It is important to make sure that the nail gun face plate will not damage the surface finish. Pre-drilling nail holes or 3M Blue tape placed on the faceplate can prevent splits or to prevent damages.)
- Stagger the ends of boards at least 6" in adjacent rows.
- Fasteners should hit the joist whenever possible. To ensure proper alignment, make sure the flooring along the working chalk line is straight.



- Nailing schedule for flooring: The first run should be faced nailed then counter sunk. All other runs to be nailed, space with 6-8" at the tongue with a minimum of 2 fasteners per piece and 2-3" from each end.
- Continue across the room until finished. Remember to allow spacing for expansion gap.
- Install molding and trim. (Always fasten moldings to the wall, not the flooring.)

GLUE-DOWN INSTALLATION

Tools & Materials: Hammer, Power saw, Chalk line, Adhesive and Trowel.

Recommended Adhesive :

Bostik's Best Adhesive or BSTurethane by Bostik Findley (800-523-6530)

Moisture sealer - Bostik MVP (Moisture Vapor Protection)

Franklin 811 or Franklin 821 (800-669-4583)

Moisture sealer – Franklin Titebond 531 Epoxy Moisture Control System

* Using moisture sealer along with the adhesive is always recommended.

Suggested Trowels: (Consult with adhesive manufacture to confirm the trowel size.)

Bostik's Best 3/16"x5/32" V Notch



Franklin 821 3/16"x3/16"x3/16" Square Notch



- D&M strongly recommends glue-down to be the best way to install its engineered flooring.
- Follow the adhesive manufacturer's instructions.

Spread out the adhesive holding the trowel at a 45° angle. Engage the side tongue of a plank into the groove side of a plank in the installed area. Maneuver board in place so it is flush against the side plank and the end plank. After three to four rows of flooring are installed, tape rows together with removable 3M blue masking tape to prevent the floor from moving. Flooring that is not flat must be weighted to ensure good contact. Additional adhesive may be applied to fill minor voids.

As you work, immediately clean any adhesive off pre-finished flooring with Bostik Hand & Tool Towels, Bostik AR 2000 or a light application of mineral spirits. Be careful not to rub adhesive residue too aggressively as it will cause a "glossy" halo in the factory finish.

After the large part of the room is installed, go to starting area, remove the nailed starter boards, and complete the installation working out of the room. If you must walk on the floor, secure rows with blue tape and step carefully. When installation is complete, use wedges to hold the floor tight. Roll floor with 100 lb roller to insure transfer of adhesive. Installed floor will begin to hold tight in 8 hours, depending on humidity and temperature. Let installed floor cure for at least 24 hours before exposing to heavy traffic, and remove wedges prior to installing molding.

See Warranty & Maintenance for more information.

For more general installation instructions, see NWFA Installation Guideline for more details.

www.nwfa.org (800-422-4556)