



Engineered Hardwood Flooring Installation Instructions

For Collections Including Royal Oak, Royal Oak Maison, CASA, Silver Oak, Tuscany Wide, Tuscany Random Widths, American Vintage, Modern Farmhouse, and Modern Craftsman

PLEASE READ BEFORE INSTALLATION

INSTALLATION WARNING :

Installation conditions – including temperature, sun exposure and humidity – will affect this product's performance over time. For best results, room temperature and humidity of installation area must be kept consistent with normal, year-round living conditions for a minimum of one week prior to installation. All products require a specific temperature range of 60°F to 80°F with 35% to 55% relative humidity. Installation outside of these recommended ranges or over a wet subfloor will likely cause movement in the flooring, including potential shrinkage, tip-raising, gapping between pieces, cupping and face-checking. **D&M's Engineered Hardwood Flooring MUST be installed according to the National Wood Flooring Association's (NWFA) installation guidelines in order for the Limited Warranties to be valid.** The most current publication of the NWFA guidelines is available to all NWFA members, and can be found at www.nwfa.org (800-422-4556)

INSTALLER'S / OWNERS RESPONSIBILITY

As a natural product, hardwood contains inherent variations in color, grain and appearance and other visual imperfections. D&M's Engineered Hardwood Flooring is manufactured in accordance with industry standards which permit a defect tolerance not to exceed 5%. These defects may be the result of manufacturing or naturally occurring characteristics of the material. It is recommended

that a 5-10% cutting or grading allowance be added to the total sq footage when calculating the quantity of the flooring required. For diagonal installs add 15% for waste. It is the sole and joint responsibility of the installer and owner to conduct a quality inspection of all the flooring prior to installation. All pieces of flooring should be examined for quality of manufacture, finish and color. If the product quality is deemed unacceptable, it should not be installed. Flooring that has been installed will be deemed to have been inspected and accepted by the installer and owner. It is the sole responsibility of the flooring installer to ensure that the job site, subfloor and installation tools and materials meet or exceed industry standards. D&M voids all responsibility for problems arising from incorrect or improper site preparations or installations procedures.

JOBSITE CONDITIONS & PRE-INSTALLATION PLANNING

General Information

- 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 downspouts 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.
- 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.
- Hardwood flooring will expand and contract with changes in ambient temperature and humidity. To allow for this, during installation leave a 1/2" expansion space around the entire perimeter of the floor between the flooring and the walls. Also leave a 1/2" expansion space where the flooring will meet and vertical obstacle, such as stairs, pipes, door sills, tiles, cabinets, etc. In climates with extreme variations in humidity, it may be necessary to leave a larger expansion space.

Subfloor Preparation

The installer and customer are jointly and solely responsible for ensuring that the subfloor is suitable for the flooring application and properly prepared for installation.

Subfloor Conditions

- 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 60 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.
- Appropriate moisture test must be done prior to installation – Always document your readings.

Wood Subfloors

Plywood sub-floors must meet local building code requirements. They must be secure to the joists, free of squeaks and protruding fasteners. 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 Subfloors

Concrete subfloors must be fully cured, at least 60 days old, and should have minimum 6-mil poly-film between the concrete and ground. Lightweight concrete can hold more moisture and may take longer to dry out to an acceptable moisture content. A moisture barrier is required over all concrete subfloors. Installations over concrete require the use of a Calcium Chloride test per ASTM F 1869, or ASTM F2170 in-situ Relative Humidity test using probes inserted into holes drilled into the concrete. Test all areas where wood will be installed. The results of the Calcium Chloride tests should not exceed 3 lbs per 24 hours per 1000 square feet, and in-situ test results should not exceed 75% RH. Carefully record all results. These tests give a snapshot of moisture conditions at the time of the test, but do not reflect the permanent year-round condition of the substrate. If Gluing Down on concrete that is on or below grade, it is highly recommended to use a concrete sealer approved by the manufacturer of the adhesive you have chosen, even if you believe the concrete is dry. A concrete slab on or below grade that measures dry today may become moist in the future and cause floor failure. D&M Flooring is not responsible for site related moisture issues.

NAIL DOWN/STAPLE INSTALLATION GUIDELINES

NOTE : For planks wider than 6.5”, follow the ‘Nail + Glue Assist’ Installation Instructions.

Nail down installation is not recommended.

NOTE : Nailing planks wider than 7.5” without a full spread adhesive will void all warranties.

Nail down installation is not recommended.

Recommended Nail/Staple Systems :

Power Nail pneumatic Model 50P Flex: 18 gauge

Porta Nail pneumatic Model 4614: 18 gauge

Bostitch pneumatic Model EHF1838K: 18 gauge

Primatch pneumatic Model Q550R: 18 gauge

ENGINEERED WOOD RECOMMENDED FASTENER SELECTION

Board thickness 1/2" - 5/8"	18 or 20 gauge engineered flooring staples or cleats	1-1/4" or 1 -1/2" long
Board thickness 3/8"-7/16"	18 or 20 gauge engineered flooring staples or cleats	1" or 1-1/4" long

Nail Down/Staple Installation Instructions

- Make sure to properly test subfloor before installation, following subfloor preparation instructions previously discussed.
- A 15 lb. felt paper moisture barrier should be applied to the plywood subfloor with 6” overlaps before installing the new wood floor per ASTM D-4869.
- Create a working line parallel to the starting wall, in multiples of our engineered plank width, to set up the baseline of installation.
- Starter Rows requires that installation be done by leading with the tongue. When starting at the wall, trim groove off the back of the boards being used for the starting row. Face nail the

back edge of the board with 18- gauge nails. Then blind nail into the pocket above the tongue with one of approved nail/staple systems.

- Install the second row by sliding the groove side on to the tongue of the first row. Blind/edge nail it in to place, with fasteners every 4" to 6" and 2" to 3" from each end joint. Stagger end joints by at least 8". 6. Continue nailing and gluing 2-3 rows at a time in this manner across the room. Avoid creating "H" patterns (where an end joint is adjacent to another end joint in the second to last row installed). Use cut ends to start the subsequent row, discarding any pieces shorter than 8".
- Use adjustable pneumatic power hammer or nailing machine with 1 1/2" – 2" nails as is required and make sure nailing foot is appropriate to the nails / staples used. To avoid damage to the tongue be sure to adjust for proper pressure on the compressor.
- Add each additional row of flooring, watching the pattern repeat and offsetting or staggering the joints as desired. (Generally, joints should either match in a specific pattern or be staggered by no less than six inches). Finished areas should be covered with a breathable protective paper, NEVER PLASTIC, immediately after installation to prevent damage. Do not tape protective paper to the finished surface of the wood for extended periods of time.
- Install molding and trim. (Always fasten moldings to the wall, not the flooring.)
- Do not allow foot traffic on the floor for 24 hours after installation is complete.

Disclaimer

D&M Engineered Harwood Flooring products are not warranted against squeaking, popping or crackling when using nail down/staple installation methods. Some squeaking, popping or crackling is normal and these symptoms may be aggravated in arid areas or during dry conditions.

Nail + Glue Assist Installation Instructions

NOTE : Nail + Glue Assist installation is recommended when nailing down/staple planks over 6.5" wide.

There are two recommended procedures for glue assist.

Method one: Glue applied to subfloor This option can be used on most products and is the most efficient to employ. Select the area of substrate on which you'll be installing. As with any glue application, select an area that can be worked comfortably within the adhesive's open time. Apply beads of adhesive directly to the subfloor perpendicular to the direction of the flooring boards. Place beads maximum of 12" apart. Place boards onto glued area as normal and set fasteners. Clean up any excess glue immediately according to glue manufacturer's instructions.

Method two: Glue applied directly to floor boards. This glue assist option is recommended for products with long fixed length boards. Apply adhesive to the underside of each board. Apply a 1/4" bead parallel to each end, approximately 1" from the end. Apply in a 1/4" bead a serpentine pattern down the length approximately in the center of the board, keeping glue 1" in from the edges of the board. Carefully set the board in place (to avoid getting glue on other surfaces) then nail in as normal. Clean up any excess glue immediately according to glue manufacturer's instructions. Glue End Joints Certain wide plank products also requiring gluing of the end joints for added stability.

- Make sure to properly test subfloor before installation, following subfloor preparation instructions previously discussed.
- Create a working line parallel to the starting wall, in multiples of our engineered plank width, to set up the baseline of installation.
- Trowel spread the adhesive on the subfloor along the chalk line wide enough to allow the first row of flooring to be installed, being careful not to cover the line. Follow the adhesive manufacturer's recommendations for wet lay times before proceeding to the next step.
- Starter Rows requires that installation be done by leading with the tongue. When starting at the wall, trim groove off the back of the boards being used for the starting row. Face nail the back edge of the board with 18- gauge nails. Then blind nail into the pocket above the tongue with one of approved nail/staple systems.
- Trowel spread enough adhesive to install 2-3 more rows.
- Install the second row by sliding the groove side on to the tongue of the first row. Blind/edge nail it in to place, with fasteners every 4" to 6" and 2" to 3" from each end joint. Stagger end joints by at least 8". 6. Continue nailing and gluing 2-3 rows at a time in this manner across the room. Avoid creating "H" patterns (where an end joint is adjacent to another end joint in the second to last row installed). Use cut ends to start the subsequent row, discarding any pieces shorter than 8".
- Use adjustable pneumatic power hammer or nailing machine with 1 1/2" – 2" nails as is required and make sure nailing foot is appropriate to the nails / staples used. To avoid damage to the tongue be sure to adjust for proper pressure on the compressor.
- Add each additional row of flooring, watching the pattern repeat and offsetting or staggering the joints as desired. (Generally, joints should either match in a specific pattern or be staggered by no less than six inches). Finished areas should be covered with a breathable protective paper, NEVER PLASTIC, immediately after installation to prevent damage. Do not tape protective paper to the finished surface of the wood for extended periods of time.
- Install molding and trim. (Always fasten moldings to the wall, not the flooring.)
- Most adhesives require that the installer clean the adhesive off the flooring boards during the installation. Follow the adhesive manufacturer's recommendations for this procedure.
- Do not allow foot traffic on the floor for 24 hours after installation is complete.

Disclaimer

D&M Engineered Hardwood Flooring products are not warranted against squeaking, popping or crackling when using nail down/staple installation methods. Some squeaking, popping or crackling is normal and these symptoms may be aggravated in arid areas or during dry conditions.

GLUE-DOWN INSTALLATION GUIDELINES

Recommended Adhesive :

Bostik's Best, Greenforce, or Vapor-Lock
 Dri-Tac Golden Bullet, or Supreme Green
 Sika T-35
 Titebond 771, or 811

Suggested Trowels :

Consult with adhesive manufactures to confirm the trowel size.

Glue Down Installation Instructions

- Make sure to properly test subfloor before installation, following subfloor preparation instructions previously discussed.
- Apply a moisture barrier to slab. Bostik, Dri-Tac, Sika and Titebond are recommended.
- A urethane-based adhesive should be used exclusively. Bostik, Dri-Tac, Sika and Titebond are recommended.
- Read the adhesive manufacturer's instructions (printed in detail on the glue container) to choose the correct size trowel.
- Create a working line parallel to the starting wall, in multiples of our engineered plank width, to set up the baseline of installation.
- Following the spread rate and curing time suggested by the glue manufacturer, spread glue evenly on the subfloor to cover an area appropriate to the number of planks that can be laid in time for best result of the glue.
- Lay one row of flooring planks along the entire length of the work line. Add each additional row of flooring, watching the pattern repeat and offsetting or staggering the joints as desired. (Generally, joints should either match in a specific pattern or be staggered by no less than six inches).
- A 1/2" expansion space should be left around the perimeter. Roll whole floor with a 150 lb. roller within 3-6 hours after installation. Finished areas should be covered with a breathable protective paper, NEVER PLASTIC, immediately after installation to prevent damage. Do not tape protective paper to the finished surface of the wood for extended periods of time.
- Clean wet adhesive from the surface of the floor frequently using the manufacturers recommended remover. Use clean towels, changing frequently to prevent haze and residue. Contact the adhesive manufacturer for adhesive removal remedies.
- Do not allow foot traffic on the floor for 24 hours after installation is complete

FLOATING INSTALLATION GUIDELINES

Recommended Poly-form Underlayment :

Eternity's Seal Guard Zero VOC

MP Global's Sound Buffer or Quiet Walk

Floating Installation Instructions

- Make sure to properly test subfloor before installation, following subfloor preparation instructions previously discussed.
- If needed, apply a moisture barrier to slab. Bostik, Dri-Tac, Sika and Titebond are recommended.

- After the moisture barrier has cured and dried apply a floating floor poly-foam underlayment, **Eternity's Seal Guard Zero VOC** and **MP Global's Sound Buffer or Quiet Walk** are recommended. Please follow manufacturers installation instructions.
- Floating floors is generally a more difficult installation to start, as the boards will move. It is imperative that the first few rows be straight and gap free.
- Create a working line parallel to the starting wall, in multiples of our engineered plank width, to set up the baseline of installation. A bead of adhesive should be applied all along the TOP groove of each plank, any PVA glue meeting European DIN EN 204 D3 standard is recommended.
- Lay one row of flooring planks along the entire length of the work line. Work with the tongue side outward. NEVER engage material by striking the groove edge, use a tapping block against the tongue or board puller to avoid edge damage while engaging plank. Add each additional row of flooring, watching the pattern repeat and offsetting or staggering the joints as desired. (Generally, joints should either match in a specific pattern or be staggered by no less than six inches).
- A minimum 1/2" expansion space should be left around the perimeter.
- Finished areas should be covered with a breathable protective paper, NEVER PLASTIC, immediately after installation to prevent damage. Do not tape protective paper to the finished surface of the wood for extended periods of time.
- Do not allow foot traffic on the floor for 24 hours after installation is complete


Disclaimer

Upon completion of the floating installation of a random length engineered wood floor, the floors surface may not appear as continuously flat as compared to a traditional long strip floating floor. Hollow sound and squeaking should be expected since the flooring is not secured to the subfloor by means of chemical fastening (gluing) or by mechanical fastening (staples, cleats or nails). Hollow sound is NOT a defect caused by manufacturing, but rather the result of the way in which the floor is put together.

See Warranty & Maintenance for more information.

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

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

 **WARNING:** Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause **cancer**. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to www.P65Warnings.ca.gov/wood.