



Annapolis Valley - Engineered Floors - Installation Instructions

OWNER/INSTALLATION TECHNICIAN RESPONSIBILITIES:

Order Quantity: When the flooring is ordered, a minimum of 5% (recommended 7% - 10%) must be added to the actual square footage to allow for overage (cutting) and selection (grading) allowance (recommended 15% for diagonal installations). The allowance for overage depends on the complexity of the space the flooring will be installed in.

Job Site inspection: Before any hardwood flooring is installed, the installer must make sure that the job-site environment and the condition of the sub-surface involved meet or exceed the standards and recommendations as outlined in the SUB-FLOOR Preparation and JOB SITE Inspection sections below.

The owner/installation technician assumes final responsibility for inspecting product quality. Carefully examine each board for quality, color and finish prior to installation – using reasonable selectivity to hold out or cut off pieces with defects. If an individual piece is questionable in regards to the grade, color, or finish, the installer should not install that piece. **The Manufacturer is not responsible** for boards/floors installed with visible defects or *for damage caused by negligent installation practices or misuse of installation tools.*

Controlled Environment: Manufacturer strongly advises to keep these products in controlled conditions with humidity within the 35%-55% range 72 hours before installation and continuously thereafter. The room temperature should be between 60 – 80° F before (72 hours), during and after installation for the life of the floor. It is the responsibility of the installers/owner to determine if the job site conditions are environmentally and structurally acceptable for wood floor installation. The manufacturer declines any responsibility for wood failure resulting from or connected with subfloors, subsurface, job site damage or deficiencies after the hardwood flooring has been installed.

Sub-floor moisture content: it is VITAL that the concrete is within safe moisture parameters (determined via moisture test/Calcium Chloride Test).

Correcting a minor defect during installation using filler, stain, or a putty stick is a normal procedure.

Handling and Storage:

Engineered hardwood flooring should be protected from moisture at all times during transportation, storage and installation. The flooring must be stored in a dry place prior to installation. Be sure to provide a 4" air space between the flooring cartons and the on-grade concrete subfloor to ensure proper airflow and to prevent flooring from absorbing moisture from the concrete subfloor. The wood subfloor should not exceed 13% moisture content. Use a reliable wood moisture meter to measure and document the **moisture content** of both the wood subfloor and the wood flooring. The difference between the moisture content of the wood subfloor and the wood flooring must not exceed 4%.

Hardwood flooring should be **acclimated to the environment** in which it is expected to perform. Open cartons without removing the flooring and allow the flooring to acclimate to live-in, jobsite conditions prior to installation.

WARNING: WOOD DUST

Sawing, sanding and machining wood products can produce wood dust. Airborne wood dust can cause respiratory, eye and skin irritation. The international Agency on Cancer (IARC) has classified wood dust as nasal carcinogen in humans.

Precautionary Measures: If power tools are used, they should be equipped with a dust collector. If high dust levels develop, use an appropriate NIOSH-designed dust mask. Avoid dust contact with eyes and skin.

First Aid Measures: In case of irritation, flush eyes and skin with water for at least 15 minutes. If irritation persists, contact a physician.

FLOATING INSTALLATION - TOOLS AND/OR ACCESSORIES NEEDED:

- Broom
- Pencil
- Terry Cloths (for wiping off adhesive squeeze-out)
- Tape Measure
- Moisture Meter
- Safety Equipment (Goggles and Mask)
- Circular or Hand Saw; Miter or Table Saw
- Hand/Jamb Saw (for undercutting door trim)
- Hammer; Rubber Mallet (Light Colored)
- Nail Punch
- Finish Nails (if installing trim and molding)
- Pry/Pull Bar
- Tapping Block
- Utility Knife
- Floating Floor Foam Underlayment
- 3-M Blue Painter's Tape
- Floating Floor Engineered Hardwood Adhesive

INSTALLATION INSTRUCTIONS: FLOATING

STEP 1: Pre-Installation Jobsite Inspection:

Prior to installation, the building must be structurally complete and enclosed. All exterior windows and doors must be installed. Any "wet" work inside the house (masonry, drywall, and paint) must also be complete – allowing adequate drying time to eliminate unnecessary moisture content within the building. Concrete should be at least 60 days old, but preferably 120 days old (it takes 4 months generally for a newly poured concrete slab to completely dry out). Permanent HVAC (heating/air conditioning) systems must be operating for at least 14 days before installation, maintaining a constant room temperature between 60-75 degrees Fahrenheit and a relative humidity of 35-55%. Exterior drainage – including gutters and downspouts, must be in place and drain away from the building.

Engineered Hardwood Floors can be installed on, above, or below grade, although they are not recommended for full bathroom installations. Basements and crawl spaces must be dry. Crawl spaces must be a minimum of 24" from the ground to the underside of the joists. A vapor barrier (6-8 mil black polyethylene film) must be put in crawl spaces with joints overlapped and taped.

Sub-floors must be checked for moisture content using the appropriate metering device for concrete or wood. Examples of calibrated concrete moisture meters that work very well: the Delmhorst Moisture Meter Model G and the Tramex Concrete Encounter.

Performing Moisture Tests:

WOOD SUBSTRATES: Test the moisture of the wood sub-floor using a calibrated moisture meter approved for testing wood moisture according to the meter manufacturer. The reading should not exceed 14%, or read more than 5% different than the moisture content of the product being installed.

CONCRETE SUBSTRATES: There are multiple ways to test for excess moisture in concrete.

- Use an approved, calibrated moisture meter such as the Delmhorst Moisture Meter Model G or the Tramex Concrete Encounter. On the Tramex Concrete Encounter Meter, moisture readings should not exceed 4.5 on the upper scale.
- Perform a Polyfilm Test. Tape down 2' x 2' Polyfilm squares (a clear garbage bag or plastic drop cloth will do) in several places on the floor. Wait 24-48 hours, and then check for the appearance of condensation on the inside of the bag or plastic and for a darkening on the concrete in that area. Either occurrence signals the likely presence of excess moisture, requiring a mandatory Calcium Chloride Test.
- Once you have determined the moisture content and if excess moisture is indeed present, a Calcium Chloride and pH Alkalinity Test must be performed to determine moisture emissions and alkalinity from the concrete slab.

- Perform a Calcium Chloride test. The maximum acceptable reading is 3 lbs./24 hours/1000 sq. ft. for moisture emissions.
- Perform a pH Alkalinity Test (a 3% Phenolphthalein in Anhydrous alcohol solution). Chip the concrete at least ¼" deep (do not apply directly to the concrete surface) and apply several drops of the solution to the chipped area. If any color change occurs, further testing is required. Using the number method on the test, a pH reading of 6-9 on a pH scale of 1-14 is considered acceptable.
- If the tests results exceed this number, the concrete slab should be sealed with an appropriate sealer, such as Bostik's MVP4 (Moisture Vapor Protection) Sealer, prior to installation. The manufacturer is not responsible for Hydrostatic, Hygrostatic, or thermal dynamics resulting from an improper concrete slab installation.

STEP 2: Storing the Material Prior to Installation

Once the building meets the above conditions, the material can be delivered to the site. Handle and unload the flooring with care and store within the area in which it is expected to perform. Flooring stored on concrete floors should be elevated at least four inches to allow circulation under the cartons. Cartons must be stored horizontally (parallel to the ground). Never store them standing on end. **Leave all boxes SEALED** while they are acclimating (this way all boards will acclimate within the boxes at the same rate). ***Engineered Hardwood Floors must acclimate for 72 hours prior to installation in the room that it is being installed in.***

STEP 3: Recommended Sub-floor Types (Wood and Concrete)

Floating Installation:

- Can be installed over any sound, flat structural surface meeting or exceeding building codes.
- The floor must be flat to 3/16" in a 10' Radius. If the floor requires levelling, the low areas may be filled in by using a floating latex fortified Portland levelling compound. The levelling compound must be left to dry as per the manufacturer instructions before installing the floor over top of it.
- Do not install cabinets or walls on top of the floating floor. An Expansion Gap of at least ½" must be maintained around the perimeter of the room, walls, cabinets, door frames or any other heavy fixed vertical objects.

Glue-Down and Floating Installation Only:

- Concrete Slab
- Acoustic Concrete
- Cork (acoustic)
- Ceramic, Terrazzo, Marble, or Slate
- Resilient Vinyl or Tile
- Metal

STEP 4: Preparing the Sub-floor

All Sub-floors must be:

- **CLEAN:** scraped, sanded, or swept; free of wax, grease, paint, oil, and other debris.
- **SMOOTH/FLAT:** within 3/16" in 10' and/or 1/8" in 6'. Sand high areas or joints. Fill low areas (no more than 1/8") with a suitable cement type filler.

• STRUCTURALLY SOUND:

Replace any water-damaged, swollen or delaminated sub-flooring or underlayment, as they are unable to properly hold staples or fasteners. Plywood sheets should be laid with grained outer plies at right angles to joists; adjacent rows staggered four feet and nailed every 6" along each joist with 7d or larger nails. When installing directly over old wood or strip floor, sand any high spots, re-nail old floor to eliminate squeaks or loose boards, and install new planks at right angle (perpendicular) to the old floor, or overlay old floor with 1/4" plywood underlayment. Leave a 1/8" gap at the edges and nail with 7d or larger nails every 6" at the edges and every 12" in both directions and through the interior of each sheet of plywood. It is normal for mechanically (staple/nail/cleat) fastened floors to make minor occasional noises such as popping, squeaking, or crackling which can change as environmental changes occur. This is not a manufacturing defect. You can help reduce popping, squeaking, or crackling by being sure that the subfloor is secured properly (as explained above) and is structurally sound, that there is no loose joists or decking, and is swept very thoroughly prior to installation.

- **DRY:** Moisture content of sub-floor must not exceed 14% prior to installation of wood flooring. All moisture testing must be done before wood has been acclimated 72 hours and job-site requirements met.

STEP 5: Installing the Floor

GENERAL Installation TIPS:

- Open 4 to 5 separate cartons at one time and mix the pieces to maximize the color and shade variations.
- Install the product parallel to the longest wall to provide the most appealing visual effect.
- Stagger the ends of the boards at least 6" in adjacent rows for a more appealing overall look.
- **Allowing for a 1/2" minimum expansion gap** around all vertical obstructions is CRITICAL! Wood expands and contracts with changes in humidity. Wood will buckle and/or cup if an adequate expansion space is not allowed for. ALWAYS allow for expansion space when making cuts around or beside vertical objects (i.e. walls, pipes, etc.).

DOORWAY/WALL PREPARATION:

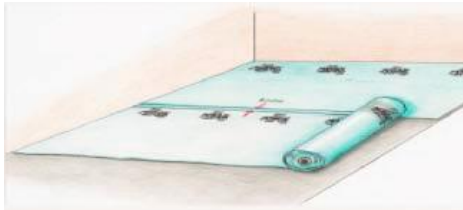
- Undercut or notch-out door casings 1/16" higher than the thickness of the floor being installed.
- Remove existing base and shoe molding on wall as well as doorway thresholds. These can be reapplied after the installation is complete.

ESTABLISH A STARTING POINT: FLOATING FLOORS

An exterior wall is usually the straightest and best reference line to start the installation from. If possible, the direction of the flooring being installed should be at right angles to the floor joists. Establish a starting line by leaving a **minimum 1/2" expansion gap** around all vertical obstructions. In at LEAST 2 places, measure out equal distances from the starting wall. It is recommended to measure 3-1/8" out from the starting wall and 12" – 18" in from the 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. Plan the floor layout (width-wise) so you don't have to rip the last row **NARROWER** than 1". You may have to rip the **FIRST** row to ensure the **LAST** row is at LEAST 1" wide.

INSTALLING THE FOAM UNDERLAYMENT: FLOATING INSTALLATION ONLY

- Install your first row in the **SAME** direction you will be installing the hardwood flooring.
- Extend the underlayment a few inches up the wall on either side.
- Trim this excess underlayment off **AFTER** installing the hardwood, but **BEFORE** you install trim or moldings.
- If a non-adhesive underlayment (on the seams) is used, tape all seams together.



INSTALLING THE 6 MIL POLYETHYLENE FILM: FLOATING INSTALLATION ONLY (if needed)

- Install your first row in the **SAME** direction you will be installing the hardwood flooring.
- Extend the underlayment a few inches up the wall on either side.
- Trim this excess underlayment off **AFTER** installing the hardwood, but **BEFORE** you install trim or moldings.
- Overlap the 6 mil Polyethylene Films 18 inches and tape them together to form an adequate moisture barrier (if installing over a concrete subfloor).

ADHESIVES FOR FLOATING ENGINEERED FLOORS

- Use recommended floating floor glue for use with engineered hardwood floors for installation. Glue placement is very important. Turn the plank over and apply a bead of glue (3/32") to the topside of the groove. The glue must be placed along the topside of the groove the full length of the grooved side and on the end. When the plank is turned back over the glue will run down the back of the groove providing total coverage.
- Do not apply the adhesive if the room temperature or sub-floor is colder than 65 degrees Fahrenheit.

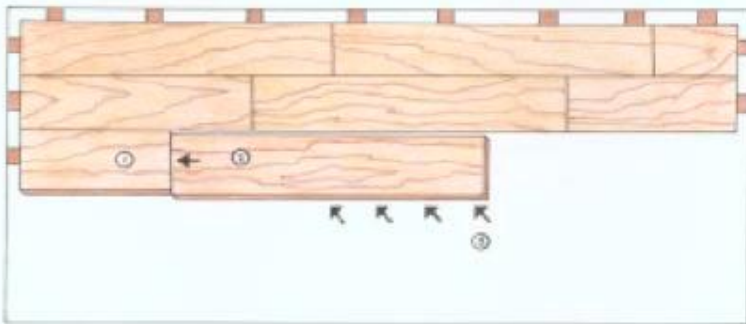
WARNING: Actual working time with adhesive varies depending on the environmental conditions of the structure. The manufacturer will not be responsible for improper application of adhesives.

NOTE: Urethane adhesive can sometimes be difficult to clean off if you do get some on top of the hardwood you are installing. Make sure to have a Urethane Adhesive Remover or Mineral Spirits and a Terry Cloth readily available to remove excess adhesive.



INSTALLING THE FIRST ROWS: FLOATING INSTALLATION ONLY

- Install the first 4 rows together initially, allowing them to dry before installing the rest of the floor. This will ensure that the remainder of the floor is straight while installing.
- Select your first board. Remember to take boards from multiple boxes while installing. Do not install 2 pieces from the same box in a row – mix the colors and shades while installing to get a more favorable overall look. Also, remember to stagger the end-joints of adjacent rows at least 6" to create a more appealing look for the floor.
- The groove of the boards should be facing the starting wall. Use the longest boards available for the starter row. Apply a continuous bead of adhesive to the groove on the end of the board. Products with the end tongue on the LEFT should be installed right to left; if on the RIGHT they should be installed left to right.
- Complete the first row. Remember to **keep a ½" expansion space** on all sides touching the wall. Install wedges all along the wall against your first row to maintain that expansion space while you're installing. AVOID installing any boards shorter than 16" in the first four rows.
- Use the pull/pry bar to install the last board in the row. Install wedges into the expansion space and tighten.
- Once boards are installed, wipe off glue squeeze-out immediately with a clean, damp (not dripping wet – just damp) cloth.
- Using the 3-M Painter's tape, tape the boards together after they have been glued and tapped together. This also ensures that the boards will remain tightly connected to each other while they dry.
- Start the second row by applying a continuous bead of adhesive to the inside groove on the length and end of the boards.
- Tap the boards together using a TAPPING BLOCK. Do NOT hammer directly on the tongue of the product – this will smash the end of the tongues making it impossible to install the next board to it.
- Install the remaining 3 rows the same way. Allow to set and dry before installing the rest of the floor.
- Remember to insert the wedges on the ends (as necessary) to restrain the movement of the floor while you are installing.



COMPLETING THE INSTALLATION: FLOATING INSTALLATION ONLY

- Complete the floor, gluing the wood together as described above, and tape the boards together after you have cleaned up the squeeze-out to ensure a tight fit.
- After you have finished and the floor is dry, remove all of the tape and clean the floor using a hardwood flooring cleaner.
- Trim all of the floating floor underlayment and install (or re-install) any trims or moldings as may be needed. Remember to nail the moldings into the WALL, not the FLOOR.
- Inspect the floor closely, filling in any gaps with a hardwood filler or matching putty.
- If further construction is necessary after the hardwood is installed, you can protect the installed floor by laying a quality rosin paper or other paper that allows the floor to breathe, taping it to the baseboards. NEVER use plastic, solid rubber, or polyethylene film to cover the installed floor since they both trap moisture and will damage the installed hardwood (creating cupping or swelling issues).

REMINDER: Take boards from multiple boxes while installing. Do not install 2 pieces from the same box in a row – mix the colors and shades while installing to get a more favorable overall look. Also, remember to stagger the end-joints of adjacent rows at least 6” to create a more appealing look for the floor.

- Line up the groove of the first row with the starting point chalk line. The tongue of the boards should be facing the starting wall. Align and securely seat the first row in the adhesive – all additional rows will be pushed back to this row. It must be straight!

GENERAL TIPS: FLOOR REPAIR

If the floor becomes scratched or dinged, it can be repaired with a putty, filler, or touch-up kit. If a board is severely damaged, it may need to be replaced, which can be done by a qualified flooring technician.

GENERAL TIPS: HARDWOOD AND SEASONS – Temperature and Humidity

Once the floor is installed it is critical to keep them well maintained. The manufacturer is not responsible for improper maintenance of the floor. Wood floors will be slightly affected by varying levels of temperature and humidity within your building. To make sure the floors are protected for as long as possible, it is VITAL to keep the room temperature between 60 – 80° F before (72 hours), during and after installation for the life of the floor. The relative humidity levels must be kept between 35% - 55%. Below are some recommendations on how to achieve that in the different seasons:

Wet/Humid (wood expands): Heaters are not generally used during these months. Therefore the floor holds in the humidity and expands. To maintain a proper humidity level, use a dehumidifier or air conditioner. You can also turn on your heater every once in a while during the summer months – this will help lower the humidity in the building. Make sure the expansion space is not blocked in any way!

Dry (wood contracts/shrinks): Wood-burning stoves and electric heating systems are used a lot during winter months – creating very dry conditions indoors. The low humidity causes the wood to contract and shrink – leaving gaps between individual boards. To prevent this, use a humidifier to keep the humidity level between 35% - 55%.