SUPERIOR
HARDWOOD FLOORING

FLOATING FLOOR INSTALLATION GUIDE

A FLOATING FLOOR INSTALLATION GUIDE FOR SUPERIOR ENHANCED AND ENGINEERED FLOORS.



SUPERIORFLOORING.CA

JULY 2024

IMPORTANT INFORMATION

Our installation instructions and warranty take precedence over NWFA guidelines. However, for situations not specified by our installation guidelines, NWFA guidelines are recommended. If the installer has concerns with grading, manufacturing, or finishing quality and cannot place the board in a less conspicuous place (i.e. closet), or cannot eliminate the imperfection, they should not install the material in question and contact their retailer. Pieces not installed because of colour variation, appearance, length, or personal subjective standards are not considered defective. Once the board is installed, it is deemed acceptable by both the installer and/or homeowner. The installer or homeowner is fully responsible for all installed hardwood flooring, even if the homeowner is not present at the time of installation.

STORAGE & HANDLING

Your hardwood floor is a natural organic product which is affected by the humidity levels in the air around it. Both before and after installation it will absorb or release moisture. Wood is a natural material that seeks to be in balance with its surroundings. Hardwood destined for use in wood floors is carefully kiln-dried for that purpose. Typically, hardwood will expand during the summer months and shrink in the winter. Acceptable humidity levels **(Chart 1)** should be maintained at all times in the rooms where your floor is installed. You will receive the wood for your floor in specially designed cartons that have been stored in a controlled environment. These conditions must be maintained throughout shipping, installation, and thereafter.

The following considerations are important, and failure to follow them will void your warranty.

ACCLIMATION

Herwynen Sawmill Ltd. will not warranty Superior or Enhanced Flooring products that aren't stored and installed within the relative humidity range specified in Chart 1. Superior and Enhanced Flooring products cannot be stored on the construction site or acclimatized before install, doing so will void your warranty.

WOOD SUBFLOOR MOISTURE CONTENT

Measure the moisture content of the sub floor and the hardwood to be installed using a moisture meter. The moisture reading of the sub floor must be between 6% and 12% maximum. Hardwood strips must be under 2% maximum difference when compared to the sub floor. If the moisture content of the sub-floor is too low or high, postpone installation. Increase ventilation or use a humidifier or dehumidifier to adjust moisture levels before installation.

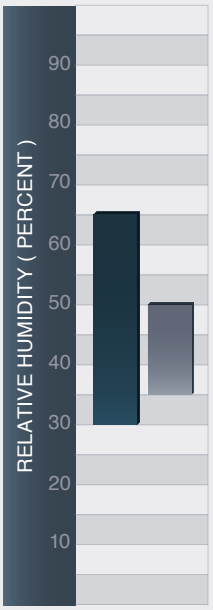
SUBFLOOR DESIGN

For wood sub-floors, hardwood flooring must be installed on plywood or OSB over joists. If the existing sub floor consists of particle board, then it will be necessary to overlay it with at least 5/8" plywood before installation. Be sure hardwood flooring is installed over industry standard sub-floors and underlayment, which as a minimum standard, must be 5/8" A.P.A. approved C.S.P/D.F.P. plywood C.O.F.I stamped, 23/32" or thicker O.S.B. underlay grade PS2-92, or 5/8" tongue and groove boards.

RELATIVE HUMIDITY

Drywall, plaster and concrete must be completely dry and the heating system fully operational with the temperature maintained at 22°C for one to two weeks before the flooring is delivered to the site. All concrete in the structure must have cured for at least 30 days.

CHART 1



Acceptable humidity levels should be maintained at all times in the rooms where your floor is installed.

Superior Engineered Flooring & Enhanced Hardwood Flooring
30 - 65%

Superior Hardwood Flooring
35 - 50%



CONCRETE SUBFLOORS

Concrete leveling is a very important point. Concrete must be flat/level within 3/16th over a 10 ft. span (< 5 mm over 3 m). For new concrete, allow a minimum of 30 days cure time prior to start of concrete moisture tests. Various methods and testing devices exist to check the moisture level of a concrete subfloor. Measure moisture content with an approved moisture tests are either a relative humidity moisture test or a calcium chloride test.

POLYETHYLENE TEST

Polyethylene test (ASTM D 4263), a preliminary surface test, not a warranted test. Tape a plastic film of 2'x2' (60 x 60 cm) at several points over concrete for 48 hours to see if concrete changes color or condensation occurs. If beads of water are found on the subfloor or the concrete appears darker, further testing is necessary. This method is empirical and is a preliminary test, further analysis will be required. The reading is valid at 24 hours, but it's even better if the test can stay in place until 72 hours have passed.

RELATIVE MOISTURE TEST

Relative moisture test (ASTM F 2170), thorough test. Using an ultrasonic sensor, check the relative humidity of the concrete slab to 40 % of its depth. A reading of 75 % RH or less indicates that the concrete slab is ready to receive the wooden floor; a reading between 75% and 85 % indicates that it is preferable to place a waterproof membrane before installing the wood floor. Never install a hardwood floor when moisture level is greater than 85%.

CALCIUM CHLORIDE TEST

Calcium chloride test (ASTM F 1869), thorough test. The Calcium Chloride Test works by measuring changes in weight of anhydrous calcium chloride crystals. A small plastic dish of crystals is sealed with a plastic tape. The entire dish is weighed on a gram scale prior to exposure, and the weight, date and time the test was started must be recorded. The lid is then opened, and the dish of crystals is carefully set down on the concrete for 60 to 72 hours. The dish is enclosed within a 7-by-10-inch cover, which is sealed to the concrete. During this time, the only source of moisture being absorbed by the crystals is what can evaporate out of the covered concrete surface area.

At the end of the test, the dome is removed and the lid is placed back on the dish and sealed. Again the dish is weighed on the gram scale and the date and time are marked. The change in weight is multiplied by a constant and divided by hours to provide an estimated rate of evaporation, in pounds (which is the equivalent weight of the water that evaporates out of a 1,000-square foot surface area during 24 hours). Water weighs 8.3 pounds per gallon. If the test reports 8.3 pounds emission, then one-gallon of water is leaving a 1,000-square foot surface area in 24 hours.

A conservative, but generally recommended, allowable amount of moisture emission as expressed by the calcium chloride test is 3.0 pounds per 1,000 square feet per 24 hours at the time of the installation of the flooring. A note of caution: Use care in dealing with the lid, removal of the dish, and weighing as exposure to the atmosphere will dramatically affect the results.

GENERAL INSTALLATION GUIDELINES

It is imperative that your new floating floor not be fastened to any surface or submitted to any movement restrictions.

Expansion gaps play a fundamental role in the performance of a floating floor installation. They allow the flooring room to expand and contract freely in relation to changes in ambient humidity and prevent damage that can affect the aesthetics and structural integrity of the floor. When the room humidity varies strongly, cumulative expansion and contraction can become damaging for the aesthetics and durability of the floor.

Expansion gaps are standard for floating installations of engineered floors. The expansion gaps must be respected on all walls, columns, doorways, moulding, or any fixed elements. The use of spacers during installation insures that the appropriate expansion gaps will be used.

See reference table below.

REQUIRED EXPANSION GAP	MAXIMUM ROOM WIDTH	MAXIMUM ROOM LENGTH
3/4" (19 mm)	Between 26' - 40' (8 to 12 m)	Between 52' - 80'(14 to 24 m)

ADDITIONAL NOTES:

- The installation of a t-moulding might be necessary for any room exceeding 40' in length or width. If necessary, drywall can be undercut to obtain expansion space.
- Solid wood flooring should never be installed using the floating-floor method. Solid wood flooring is not dimensionally stable enough, when exposed to seasonal changes, to withstand this installation method.
- Areas that cannot receive baseboard or shoe moulding such as abutting floor coverings, stone fireplaces, staircase stringers, or other fixed elements in the home, must allow for adequate expansion. Floating floors should never be installed where future fixed cabinetry (i.e., kitchen island) will lock the floor down, as these are considered "fixed vertical obstructions." Any heavy furniture or appliances can affect the ability of the floor to move as an independent monolithic unit and may require additional expansion space built into the flooring system to accommodate. Advise the end-user of these conditions prior to the product selection or installation.



PREPARATION INSTRUCTIONS

- Remove baseboards, quarter rounds and then screw down subfloors securely to avoid squeaking if necessary. The subfloor must be clean, dry, smooth and flat.
- Undercut any door-jambs on the bottom of the door frames if needed to permit a strip to be inserted under them.
- Clean the bottom of any footwear worn during installation.
- For the optimal stability and acoustic performance, we recommend you use vapor-barrier underlayment with a mazimum thickness of 1/8" (3mm) and 20% minimum compression.

LAYOUT & WORKING LINES

Working lines are guidelines drawn or marked on the subfloor. Some are critical measurements, such as the primary or secondary lines, while others can be placed as guides to stop nailing or spreading adhesive, or to aid in layout of the different parts of the floor. Working lines should be measured from the longest, straightest, continuous line in the room.

- On wood subfloors, measure off of subfloor seams or the longest, straightest, continuous wall in the room to find working lines.
- On concrete subfloors, measure off of the longest, straightest, continuous wall in the room to find working lines.
- We recommend using a chalk line to transfer working lines to the subfloor. To help prevent working lines from being erased or worn away use a quick-dry aerosol spray poly over the lines.
- When using the Trammel Point layout method, please follow NWFA guidelines.

GENERAL GUIDELINES

- Your starting location should be the longest and straightest wall within the room.
- Hardwood flooring must be installed across the joists at a 90-degree or 45-degree angle for support.
- Installation should be done under natural light conditions.
- Adequate expansion space must be envisioned for the installation of all mouldings. Different installation methods require different expansions space.
- If heavy tools or other objects are dropped on the floor, they will damage the flooring. Herwynen Sawmill Ltd. will not be held responsible for scratches, indentations, damage by neglect or any other damages caused by improper handling, storage, installation, and thereafter.

SUBSTRATE REQUIREMENTS

1. Inspect and identify type of subflooring. Wood subfloors or concrete subfloors.
2. All substrates must be sound and free from squeaks, sounds and vertical deflection.
3. Subfloor thickness and floor joist/truss spacing requirements.
4. Inspect subfloor for any defects and clean subfloor of any debris.
5. Subfloor flatness: The standard for flatness with a floating floor installation method on a wood subfloor is 3/16" in 10', or 1/8" in 6'.
6. Moisture test the subfloor in relation to the flooring being used. When testing for moisture, both the wood flooring and the subfloor must be evaluated.
   IMPORTANT: Never install a wood floor over a known moisture condition. A known moisture condition is one that you are aware of and could pose future damage to the flooring. It is common practice to always test for moisture regardless of conditions so that any unknown conditions can become known conditions, which then can be handled appropriately.

TRANSITIONS & EXPANSION SPACE

1. Maintain proper expansion space at all vertical obstructions to allow for expansion/contraction. Ensure expansion space is left between the flooring and all vertical obstructions (i.e., 3/4").
2. Transition pieces allowing for expansion space should be built into the floating-floor system at any doorways less than 4 feet in width, and within any flooring system that spans greater than our recommended room width and length. (see chart)
3. Baseboard, base shoe, quarter round, and other trim pieces must not come into contact with the wood floor, allowing it to remain floating. Trim pieces should be held off the floor a minimum of 1/16" and should never be fastened to or through the flooring system.
4. Overlapping floor transition pieces such as a T-moulding must allow the flooring system to remain floating and must not be secured to the flooring.

INSTALLATION INSTRUCTIONS

INSTALLATION INSTRUCTIONS

1. Undercut all door casings 1/16" higher than the thickness of the flooring and underlayment material being installed.
2. Remove all doors and shoe mouldings.
3. Roll out the underlayment the length of the room the same direction as the flooring, cut it so it touches the outside walls. Overlap the seams 3 - 5" or as recommended by the manufacturer. Tape the edges together (we recommend tuck tape).
4. Plan the layout to avoid the final row being too narrow and for transition placement.
5. Make sure that your starting wall is straight and perpendicular to the room. Leaving an expansion space between the walls and the flooring is imperative when doing a floating floor installation. Use a spacer or wedges against the starting wall to prevent the floor from shifting or moving during installation.
6. The next step is to be racking your floor.
   a. Loose-lay the boards.
   b. Try to distribute the long and short pieces while ensuring that no end joints are within 6" of each other to avoid getting a cluster of end joints in one area **(see Image 1)**.

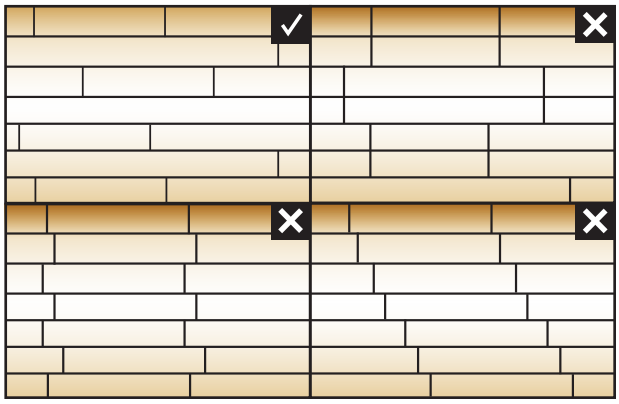


IMAGE 1

   c. Boards should also be arranged based on the natural colour variations of the species to create a random appearance. When racking (or laying out the floor) prior to installation, be sure to work from multiple bundles or packages to ensure variation.
   d. **IMPORTANT:** Be sure to inspect all flooring pieces being installed for defects or damages. Once the board is installed, it is deemed acceptable by both the installer and/or homeowner.
   e. Install and distribute lengths randomly and pull from multiple bundles.
   f. Avoid H-pattern, stair step patterns or any discernible patterns where possible. **(see image 1)**.
   g. End joints of adjacent boards should not be installed in close proximity to each other. In general, end-joint staggering row-to-row should be a minimum of twice the width of the flooring being installed **(see image 1)**.
   h. Periodically check your runs to ensure your installation is straight and not deviating from your working lines.
7. Apply tongue & groove adhesive to the top of the tongue and the bottom of the groove as you install each board. If you experience glue squeeze out when you assemble the boards, simply wipe it off. Check with the glue manufacturer for details on how to remove excess glue.
8. Continue along installing the boards for the first row. When you come to the end of the row, cut off the board, leaving enough room for an expansion gap between the floor and the wall. Make sure your off cut is at least 6" long so that you can use it to start the next row.
9. Be sure to glue both the tongue and groove on both the ends and the sides of each board as you install them.
10. Continue along with the next rows. If the off cut from the previous row is too short, discard it and get a new piece. Use a tapping block to ensure that the boards are tightly joined. Never hit the groove side or the edge of the board as it may cause damage to the boards. The use of a tool called a board puller may help to get the end joints tight.
11. Try to distribute the long and short pieces while ensuring that no end joints are within 6" of each other to avoid getting a cluster of end joints in one area **(see Image 1)**.
12. Use a table saw to rip the last row to width. Remember to leave room for the expansion gap.
13. Inspect and clean your floor as you work. Clean up any glue squeeze out as soon as you can so that it doesn't leave any residue on the finish of your new floor.
14. Never attach mouldings to the hardwood flooring **(see Image 2)**. Take care when installing the moulding to ensure that it will not inhibit the floor's ability to move. Quarter round and baseboards are to be nailed only to the wall.

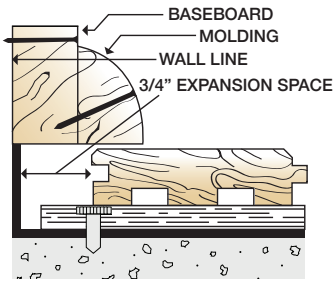


IMAGE 2

SUPERIOR
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SUPERIOR HARDWOOD FLOORING
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