



NAIL DOWN INSTALLATION GUIDE

A NAIL DOWN INSTALLATION GUIDE FOR SUPERIOR
SOLID, ENHANCED AND ENGINEERED FLOORS.

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.

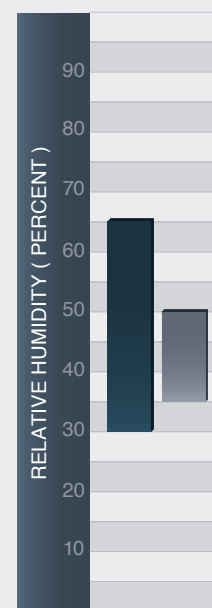
SUBFLOOR DESIGN

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%



GENERAL INSTALLATION GUIDELINES

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.
- Use **Chart 2** to determine which fasteners are applicable to the flooring you are installing. Note that Superior Flooring recommends the use of cleats on our solid hardwood. Dimpling (tiny bumps at the edge of the strip) is caused using a staple gun and is not considered a manufacturing defect.

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 a vapour retarder, transfer the working line once the vapour retarder is secured in place.
- 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.

POST INSTALLATION GUIDELINES

- Never attach mouldings to the hardwood flooring (**see Image 1 on page 6**). 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.

CHART 2

PRODUCT	FASTENER	DISTANCE BETWEEN FASTENERS	DISTANCE FROM ENDS	MINIMUM LENGTHS
Superior Hardwood Flooring 3/4" - 2 1/4"	16 ga L type cleat (Primatech P250AL)	6" to 8"	1" to 3"	1 3/4"
Superior Hardwood Flooring 3/4" - 3" or wider	16 ga L type cleat (Primatech P250AL)	6" to 8"	1" to 3"	1 3/4"
Enhanced Hardwood Flooring 3/4"	18 ga L type cleat (Primatech Q550) or 15.5 ga 1/2" staple (Primatech P250AS)	6" to 8"	1" to 3"	1 3/4"
Superior Engineered Flooring 3/4"	16 ga L type cleat (Primatech P250AL) or 15.5 ga 1/2" staple (Primatech P250AS)	6" to 8"	1" to 3"	1 3/4"

FASTENERS

The purpose of the flooring fastener is to hold the wood floor in place through the duration of its' service life. The fastener functions by displacing the wood fibers as it is driven into the board. The pressure exerted against the shaft of the fastener is what provides the fastener retention. Different types of wood floors require different flooring nailers, different fastener types, and different nailing schedules. Before beginning the installation, first identify the type of wood flooring being installed and then implement the appropriate fastener.



Use a flooring nailer specifically designed and adjusted for the wood flooring. The flooring nailer should drive the fastener through the top of the tongue, into the nailing groove/pocket, along the length of the board, with the crown/head of the fastener seated flush, in a way that it is not over-driven or under-driven. Having over-driven or under-driven fasteners can cause issues during and after installation.

CORRECT NAIL DEPTH



INCORRECT NAIL DEPTH | PROTRUDING



INCORRECT NAIL DEPTH | TOO DEEP



It is very important that the fastener you use must be long enough to pass completely through the subfloor. On 3/4" solid hardwood we do not recommend using staples because staples can cause wood displacement (dimpling) on these products.

On engineered floors, it is especially important to use cleats and/or staples where the depth of the fastener can be controlled. If the boards are pulled up, the point of failure on cleats should be their connection to the subfloor. Having the cleat driven too far into the core will cause the point of failure to be the cleat being pulled through the core of the flooring which represents a weak connection. If the staples are driven too far, it will cause wood displacement (dimpling).

GLUE ASSIST

When using a nail-down installation method on our Engineered and Enhanced flooring products 5" and wider, we recommend using a nail and glue assist. There are a variety of installation techniques for glue assist but most common is an "S" bead method. We recommend using a poly urethane construction adhesive (e.g., Sika Bond) on the back of each board. Sika Bond is our recommendation; whichever adhesive is used should have elastomeric qualities that will allow the for normal movement within the flooring system.

IMAGE - S BEAD EXAMPLE



Glue assist is only a Herwynen Sawmill Ltd. recommendation. Not using a glue assist method will not void the warranty of the flooring but may affect the performance of the product. Please note that the purpose of the glue assist is to reduce movement or assist in reducing movement which may cause crackling or popping noises. Herwynen Sawmill Ltd. will not be held responsible for these potential audible noises if glue assist is not used. Where mechanical fasteners on a nail-down installation are the primary installation method, the nailing schedule should remain the same as normal installation for the flooring being installed. The addition of adhesive is not intended as a replacement fastener mechanism, rather supplemental to the mechanical fastener.

INSTALLATION INSTRUCTIONS

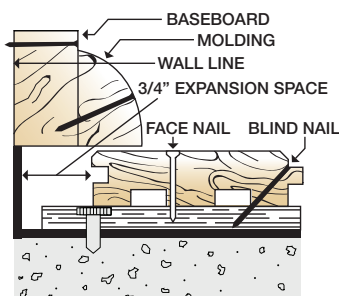
SUBSTRATE REQUIREMENTS

1. Inspect and identify type of wood panel subflooring.
2. Subfloor thickness and floor joist/truss spacing requirements.
3. Integrity of the subfloor: All substrates must be sound and free from squeaks, sounds, and vertical deflection.
4. Inspect subfloor for any defects and clean subfloor of any debris.
5. Subfloor flatness: The standard for flatness on a wood substrate with a nail down installation method is 1/4" in 10', or 3/16" 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.
7. **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.

INSTALLATION INSTRUCTIONS

1. Remove any existing base, shoe mould, or doorway thresholds.
2. Undercut door casings and jambs.
3. Snap working lines parallel to the starting wall, account for necessary expansion space.
 - a. Expansion space: is space based on material being installed at all vertical obstructions.
 - b. Measure out the width of a hardwood strip plus 3/4" (for expansion). Mark this with a chalk line against which you will place the tongue of your starter strip. The groove edge of the first strip is laid 3/4" from the starting wall to leave room for expansion (**see Image 1**). The 3/4" expansion will be needed around the perimeter of the room and/or at all vertical obstructions.

IMAGE 1



4. Roll out the vapour retarder paper the length of the room. Cut it so it touches the outside walls and overlap the inside edges 3" to 5" to completely cover the floor space of the room (or as otherwise specified vapour retarder manufacturer). Vapour retarder paper is the NWFA recommendation as an underlayment for hardwood flooring.
 - a. We recommend Aquabar "B", Silicone Vapor Shield or any product with a vapour permeance (perm rating) of greater than or equal to 0.7 and less than or equal to 10 when tested in accordance with ASTM E-96 method A.
 - b. Transfer working lines onto vapour retarder once secured.
5. Lay out the hardwood strips on the floor as they will be installed, picking the straightest boards for the first two rows.
6. All our Solid, Engineered and Enhanced products should be installed perpendicular to or on a 45° angle to the floor joists.
7. Secure the first row to the floor. For this you should face nail using #8 finishing nails or brad nails 1 1/2" long. **NOTE:** For face nailing, drill pilot holes at least 1" from the grooved side and 3" from the ends of the strip. The holes should be spaced at between 10" and 12" apart and the nails driven using a claw hammer and a nail punch with the holes eventually filled using matching the wood putty. Install and adequately secure this as your anchor row.
8. This starter row should be secured to the subfloor to provide a stationary point to be pushed against, so flooring doesn't move during installation of the remaining floor. Face-nail only where necessary. Otherwise, blind nail at the recommended schedule and glue with an elastomeric adhesive. For blind nailing the second and third rows of strips, holes will be drilled into the tongue at a 45-degree angle at least 3" from both ends and spaced as above (**see Image 2**).

IMAGE 2



9. Install the rest of the floor using your hardwood flooring nailer.
10. Use a strip which is at least 6" longer than required in order to finish off the first row. The remainder which was trimmed off the end will be used to start the next row. Make sure that the end joints do not line up with end joints of

adjacent strips (**see Image 3**). Once this piece is cut, position the two pieces into place and secure them as above. Then position the strips needed for the second row being careful that the end joints are at least 6" apart from those in the first row. Fasten as per the description above for face nailing.

11. The next step is to be racking your floor.
 - a. Loose-lay the boards, starting about 3" away from the secured row.
 - 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 3**).
 - 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 3**).
 - 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 3**).
 - h. Periodically check your runs to ensure your installation is straight and not deviating from your working lines.
 - i. Flooring mallets, tapping blocks, and pull-bars may be used to drive flooring tight during installation. Be certain to only use tools that do not damage the flooring and not use excessive force that can damage the flooring. the perimeter of the room and/or at all vertical obstructions.
12. Set your compressor to the correct PSI, ensuring that you are not over-driving or under-driving the fastener. Best practice is to use a scrap piece of flooring to ensure the fastener is seeded properly in the nail groove/pocket.
13. The last two rows against the finishing wall will be face nailed (**see Image 1 on page 6**). Don't forget to fill all nail holes with matching wood filler. Also, note that holes are less visible in the darker grain of the wood. Use of stain, wax, filler or putty for defect correction is accepted as normal procedure.
14. Spline/Slip-Tongue is used anytime the flooring direction changes and to maintain tongue and groove with the flooring system, such as using

a centre layout installation. Follow NWFA guidelines for using a spline/slip-tongue.

15. Baseboards and quarter-rounds should be nailed to the wall only and never through the hardwood strips or into the sub floor (**see Image 1 on page 6**). When you're done, clean the floor as is described in the Care & Maintenance instructions.

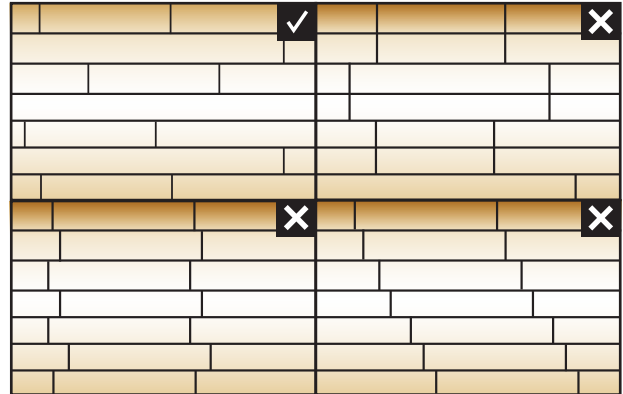


IMAGE 3



**SUPERIOR HARDWOOD FLOORING
BY HERWYNEN SAWMILL**

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SUPERIORFLOORING.CA