

INSTALLATION METHODS: Floating

No matter the specific job requirements, there are several items that need to be addressed and followed during any floating-floor installation. When available, the flooring manufacturer's instructions should be followed. This includes all recommendations and requirements that give instruction on preparation, installation, or use of the wood floor. Where manufacturer instructions are unavailable, lack information, or they reference NWFA Guidelines, use the following information.

PART I

Type of Flooring

- A. With floating-floor installations, flooring panels are not attached to the substrate. Wood floors that can be floated either feature a tongue-and-groove construction, or edges with a locking mechanism.
- B. When installing a floating-floor, engineered flooring is the only type of wood floor that can be used.
- C. Solid wood flooring should never be installed using the floating-floor method unless otherwise recommended and warranted by the flooring manufacturer. In general, solid wood is not dimensionally stable enough, when exposed to seasonal changes, to withstand this installation method. Solid flooring includes solid strand woven flooring products.

PART II

Substrate Requirements

- A. Engineered wood flooring may be floated over most subfloors, as long as it meets the minimum requirements as detailed in the applicable chapter.
- B. Inspect the substrate to ensure it meets all requirements for the flooring being installed. This includes:
 1. Integrity of the subfloor: all substrates must be sound.

2. Flatness

- a. For floating-floor installation methods, all substrates should be flat to within minimum tolerance of 1/8" in 6', or 3/16" in 10', unless otherwise specified by the wood flooring manufacturer.

- b. Wood flooring should not be floated on ramps or non-flat surfaces.

3. Moisture test the subfloor in relation to the flooring being used. Refer to the Moisture Testing Wood chapter for testing information.

- a. When testing for moisture, both the wood flooring and the subfloor should be evaluated.

- b. **IMPORTANT:** Never install a wood floor or underlayment over a known moisture condition. A known moisture condition is one that you are aware of, and could pose future damage to the flooring, the building, or the occupants. It is compulsory practice to always test for moisture regardless of conditions so that any unknown conditions can become known conditions, which then can be handled appropriately.

4. A wood subfloor must meet all joist/floor truss spacing & panel thickness requirements as detailed in the Wood Subfloors chapter.

5. Over 23/32" plywood or OSB, floating-floors may be installed in any direction in the room, regardless of joist direction. This is because the floor acts as an independent, monolithic unit.

PART III Underlayments

There are many underlayment systems available for floating-floor installation methods when specifying the project. Refer to the Sound Control/Acoustical Underlayments chapter for more information.

- A. Acoustical underlayment materials may include cork, recycled rubber or cork/rubber blends, foam pads, recycled cellulose fiber materials, and dimpled or peel-and-stick membranes. These materials may be attached to the flooring itself, floated over the subfloor, or adhered to the subfloor. Follow the underlayment manufacturer's instructions for the proper application and installation of the underlayment.
- B. Underlayments can impact wood flooring performance. When installing a floating-floor, the underlayment material functions may provide sound control and/or moisture control. Check with the flooring manufacturer or Homeowner Association's Covenants, Conditions, and Restrictions (CC&Rs), for specific underlayment requirements. Refer to the Underlayments chapters for more information.
- C. Over concrete substrates, when the acoustical underlayment material does not include a vapor retarder, installation of a separate Class I vapor retarder underneath the acoustical underlayment will be necessary.
- D. Over wood substrates above unconditioned spaces, when the acoustical underlayment material does not include a vapor retarder, installation of a separate Class II vapor retarder underneath the acoustical underlayment may be necessary.
- E. Any underlayment materials used below a floated wood floor should have a published compression resistance that meets all minimum requirements of the flooring being installed over it. Check with the flooring manufacturer for minimum compression resistance requirements.
- F. Determine the IIC, Delta IIC, or STC requirements, then work with the builder, architect, and specifier to identify a flooring and underlayment combination that aligns with the facility requirements. Follow the flooring and underlayment manufacturer installation instructions and ensure the product used is a part of an entire sound control system.
- G. The acoustical underlayment should have a published Delta IIC rating. The Delta IIC rating provides the flooring products contribution to the entire assembly in terms of isolating impact footfall noise. The Delta IIC rating can be used to compare the performance of different underlayment materials.
- H. Pressure-sensitive peel-and-stick underlayments (engineered wood flooring only).
 1. One-sided peel-and-stick underlayments with the sticky-side faced down, used as an acoustical underlayment or moisture retarding membrane, must be installed per underlayment manufacturer instructions.
 2. One-sided peel-and-stick underlayments with the sticky-side faced up, are used as a method to mechanically adhere the flooring to the underlayment material, and must be installed per flooring and underlayment manufacturer instruction.

PART IV Expansion Space/ Transitions

- A. Maintain proper expansion space at all vertical obstructions to allow for expansion/contraction of the monolithic flooring unit, based on the material being installed. Unless otherwise directed by the flooring manufacturer, expansion space left between the flooring and vertical obstructions are generally equal to the thickness of the material being installed. (Example: ½" thick material requires ½" expansion space.)
- B. 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 20 feet in width or greater than 40 feet in length (in comparison to flooring installation direction), unless otherwise directed by the flooring manufacturer.
- C. 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 of the floor a minimum of 1/16", and should never be fastened to or through the flooring system.

- D. Overlapping floor transition pieces (such as T-moulding and baby thresholds) must allow the flooring system to remain floating. Proper installation of transition pieces involves anchoring them only to the substrate and not directly to the flooring, allowing the flooring to remain completely independent.
- E. Undercut all door casings 1/16" higher than the thickness of the flooring and underlayment material being installed. Place a scrap piece of plank and a sheet of underlayment against the door casing to act as a guide and cut the door casing with a hand saw or power jamb saw set to the correct height.
- F. Areas that cannot receive baseboard or shoe moulding such as abutting floor coverings, stone fireplaces, staircase stringers, electrical outlets, or other fixed elements in the home, must allow for adequate expansion as well. This can be achieved by undercutting appropriate abutting material, or by using overlapping transitions.
- G. Floating-floors should never be installed where future fixed cabinetry (such as kitchen islands) will lock the floor down, as these are considered "fixed vertical obstructions."
- H. Any heavy furniture or appliances such as pianos, pool tables, entertainment centers, or refrigerators 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. A point load on a single board of more than 600 lbs can keep the floor from floating. Check with the flooring manufacturer for specific point-load requirements, and advise the end-user of this condition prior to the product selection or installation.

PART V

Floating-Floor Installation

- A. Remove all doors and shoe mouldings.
- B. Layout will determine the overall appearance of the floor. Plan the layout to avoid the final row being too narrow and for transition placement.
- C. After determining the direction to run the flooring, measure the width of the room (the dimension perpendicular to the direction of the flooring), and divide by the width of the flooring planks. The last row of the flooring should be no less than 2" wide (unless otherwise dictated by the flooring manufacturer), unless the entire job layout doesn't allow. Adjust the width of the starter row to avoid a narrow last row where possible.
- D. Install the manufacturer-recommended underlayment material as required by the underlayment and flooring manufacturers.
- E. Racking
 1. When racking (or laying out the floor) prior to installation, be sure to work from multiple bundles or packages to ensure variation. Distribute lengths randomly and pull from multiple bundles/packages.
 2. Flooring warranties do not typically cover materials with visible defects once they are installed. Installation is acceptance of product aesthetic quality.
 3. End joints of adjacent planks 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 planks being installed. For example, a 5" wide plank would require a 10" stagger row-to-row.
 4. Avoid "H" patterns when possible and avoid any discernible pattern in adjacent runs such as equal end-joint offsets on sequential rows and blatant stair-steps, unless otherwise directed by the flooring manufacturer.
 5. With some flooring materials, the installer is unable to follow the traditional racking guidelines due to available product lengths. Cutting a variety of starter planks from full length planks will assist in "randomizing" joints in products of equal or limited lengths.



F. Edge-glued floating-floors

1. Apply the specified glue as recommended by the flooring manufacturer. Amount, placement, and type of glue will vary from one wood flooring product to another. Poly vinyl acetate (PVA) glue generally is recommended for floating-floor installations.
2. Glue takes time to dry and will require additional time before foot traffic is allowed. Strapping the boards will help to avoid the installed flooring coming out of alignment before the glue completely dries.
3. Engage the tongue and groove snugly. Use of tapping blocks, straps, or a scrap piece of flooring may be necessary to get the flooring tight. Do not damage the edge, butt-end, tongue, or the groove while tapping the product into place.
4. At the end wall, use an end pry bar, if needed, to pull the ends of the planks tight.
5. Clean any excess glue from the surface of the planks as necessary.



G. Locking mechanism floating-floors

1. There are three basic types of locking systems referred to by how the boards are attached to each other, along the length of the plank/and at the ends of the plank:
 - a. **Angle/angle-locking systems:** The plank must be angled upward to engage the locking mechanism along the length of the plank as well as the ends of the plank before lowering it to complete the connection. This must happen at the ends first (normally along the entire row), then along the length of the planks.
 - b. **Angle/hook-locking systems:** The plank must be angled upward to engage the locking mechanism along the length of the plank, but the ends of each plank have a hook lock connection. The ends are not locked in until the next row has been installed.
 - c. **Angle/fold down-locking systems:** Also called "single-action locking" as it locks the floor in one single motion often with an audible click sound. The plank must be angled upward to engage the locking mechanism along the length of the plank, but the ends are equipped with a mechanical locking function that actually locks the ends in place.
2. Ensure you lock the lengths and the ends of the flooring together correctly as per manufacturer recommendation of the particular locking mechanism being used.

H. Peel-and-stick installations

1. Follow the floating-floor installation instructions for any engineered wood floor being placed over these underlayment materials.
 2. With the underlayment material rolled out, peel and fold back the protective film no more than the width of each plank being installed, exposing the adhesive layer of the pad. Carefully lay each plank tightly into place, and then apply pressure to set it.
- I. As with all hardwood flooring, the first row alignment is critical. Misaligned starter rows

can cause side and end gaps to appear in proceeding rows of flooring. Complete the first row. Make sure there are no gaps between the planks. Runs of flooring generally should be installed straight, measuring no more than 3/16" out of straight in a 10' run.

- J. Start each subsequent row with the cut-off end of the last board from the previous row whenever possible. Such cut off piece should be no less than 12" in length.
- K. Continue to install the floor repeating the process until the completion of the floor.

