



INSTALLATION INSTRUCTION

Congratulations on the purchase of your new floor. We thank you for your excellent selection of our NAF Engineered Hardwood product that is designed to offer you years of use and enjoyment. NAF Engineered Hardwoods can be installed above, on, or below grade.

IMPORTANT

- To ensure that your floor is installed properly, NAF Engineered Hardwoods requires that you **CAREFULLY READ AND FOLLOW** the installation instructions **BEFORE** you or a hired authorized professional install NAF Engineered Hardwoods' products. **FAILURE TO DO SO WILL VOID YOUR PRODUCT WARRANTY.**
- It is the **INSTALLER/OWNERS' RESPONSIBILITY** to inspect all material carefully **BEFORE** installation and ensure the product match what has been ordered/chosen. If you have any doubts or concerns in regard to the quality of NAF Engineered Hardwoods' products, report to your retailer **BEFORE** installation. **INSTALLATION IMPLIES ACCEPTANCE. NO CLAIM AGAINST MATERIAL OR LABOR WILL BE ACCEPTED BY NAF ENGINEERED HARDWOODS ONCE THE MATERIAL IS LAID OR INSTALLED.**
- It is the **INSTALLER/OWNERS' RESPONSIBILITY** to ensure the job-site, the ambient, and the sub- surfaces conditions **MEET** all of NAF Engineered Hardwoods' requirements.
- Wood is a natural product containing natural variations in color and grain configurations. NAF Engineered Hardwoods' floors meet the industry standards, which permits up to 5% of grading deficiencies. A 5% material waste allowance should be included within your total square footage (10% for diagonal installation is suggested)
- The selection of mechanical fasteners, such as Nailer/stapler, varies by manufacturers. It is the **INSTALLER'S LIABILITY** to ensure that tools are properly set. Dimpling of the wood face, as a result of improper setting is **NOT** considered a manufacturing defect. It is recommended to test on a couple of pieces before full install. Particularly in installations of 90 degrees to outside walls, dimpling could be very apparent under direct sunlight.
- Do **NOT** use a rubber mallet to engage the tongue and groove. Use a tapping block instead. Rubber mallets will leave abrasive marks (dull spots) and chipped edges on the floor.

- Crawlspace or basement must be cross-ventilated and covered entirely with proper vapor barriers (minimum 6 mil black polyethylene), in accordance with NWFA Installation Guidelines.
- End joint separation can result from uneven subfloors. Ensure the subfloor is level within 3/16" in 10' radius (5mm in 3m).

TOOLS

Basic tools and accessories: broom/vacuum, chalk line, tapping block, wood flooring surface cleaner, hand or electric jam saw, miter saw, wood/concrete moisture meter, safety wear, straight edge, table saw, tape measure, square, utility knife, pry bar

Applicable to Glue-down method: moisture-cured urethane hardwood floor adhesive as warranted by professional installer

Applicable to staple/nail down method: Proper fastener, with the Nailer/staplers set for the specific plank thickness.

Applicable to floating floor method: NAF Engineered Hardwoods 1\11-in-One Underlayment or equivalent

SAFETY- EXISTING FLOOR

Do not mechanically chip or pulverize existing resilient flooring, backing, lining felt, asphaltic "cutback" adhesives or other adhesives. These

Products may contain either asbestos fiber and/or crystalline silica. Inhaling such dust is a cancer and respiratory tract hazard. Always follow local health and safety regulations.

STORAGE AND HANDLING

It is important to not transport flooring product under raining and/or damp conditions. Handle and unload flooring product with care, and store in a dry and well-ventilated place, being sure to provide at least a 4" (10 cm) air space under cartons. Flooring shall not be delivered until the building has been enclosed with windows, doors are in place, and cement work, plastering and all other "wet" work are completed and dry. HVAC systems must be in place and in operation at least 14 days prior, during and after installation of the flooring.

JOBSITE CONDITION & PRE-INSTALLATION REQUIREMENT

Exterior grading must be completed with surface drainage offering a minimum drop of 3" in 10' (7.6cm in 3m) to direct flow of water away from the building. All gutters and drainage spouts must be in place. The soil around the house must be treated or graded to provide sufficient drainage. Do NOT install hardwood floors in areas exposed to excessive moisture. Acclimate the hardwood flooring products on jobsite. Material is acclimated once it has reached moisture equilibrium consistent with the ambient temperature and relative humidity of the job site conditions listed below.

It is required to maintain the relative humidity level where floor is installed at between 35% and 55%, and room temperature be consistently kept at 65-80°F (18 -27 °C). These ambient conditions are specified as pre-installation requirements and must be maintained for the life of the hardwood floor.

SUBFLOOR CONDITIONS AND INSPECTION

NAF Engineered Hardwoods' products are designed to perform on concrete, plywood, or O.S.B. subfloors.

IMPORTANT

Installer/owner is responsible for determining if the jobsite, subfloor, other conditions are environmentally and structurally acceptable for wood floor installation. NAF Engineered Hardwoods declines any responsibility for wood product failure resulting from or connected with sub floors, subsurface, jobsite damage or deficiencies after floors have been installed.

- Wall to wall carpeting must be removed before installing your new hardwood floor

STRUCTURALLY SOUND

Nail or screw down the subfloor (plywood or OSB) if there are any loose areas; otherwise, hardwood that are glued or nailed to the subfloor may squeak. It is recommended to install hardwood floor over plywood, CDX and/or concrete. Replace any water-damaged, swollen or delaminated subfloor/underlayment.

LEVEL & FLAT

Avoid subfloors with excessive vertical movement. Using a straight edge or level, check to ensure the subfloor is within 3/16" in 10' radius (5mm in 3m) or 1/8" in 6' radius (3mm in 2m). Use a cement leveling compound that has strength no lower than 3000 p.s.i. to patch/fill any low areas. Follow the cement leveling compound manufacturer's instruction to avoid overfill in deep voids.

Clean

Inspect to ensure the subfloor is free of any imperfections. Sweep or vacuum thoroughly to make sure there is no wax, paint spills, oil, debris, or anything that could impede adhesion to the subfloor.

DRY

Conduct appropriate moisture test from several different areas of the subfloors and record readings. Subfloor moisture content must not exceed 4% for concrete or 12% for plywood/OSB.

It is the responsibility of the installer/owner to verify and ensure the moisture contents are within the requirements prior to installation.

Subfloors

PLYWOOD:

3/4" (19mm) CDX plywood subfloor is preferred, but minimum thickness of 5/8" is required.

O.S.B.:

3/4" OR 23/32" stamped exterior grade is approved. Install hardwood at 90-degree angle to joists only.

CONCRETE:

Allow a minimum of 60 days for new concrete to cure before installation. If moisture reading exceeds 4% from concrete moisture test, a calcium chloride test must be conducted to verify if moisture level exceeds 3 lbs /1000 sf./24 hrs.

The following tests are required for commercial application. Both tests should be performed prior to installation.

- Calcium Chloride Test (ASTM F1869): Moisture less than 3 lbs /1000 sf./24 hrs.
- Relative Humidity Level in concrete using In-situ Probes (ASTM F21 70-02): Not exceeding 75%

OTHER:

Glue-down and Floating installation allows hardwood to be installed over ceramic, Terrazzo, and other hard surfaces. It is the installer/owner's responsibility to ensure the surfaces are dry, clean, structurally sound, and level, as described in subfloor requirements.

RADIANT HEAT

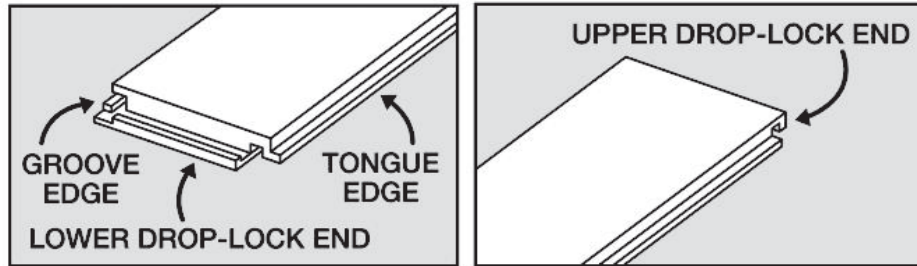
When installing over radiant heat, precautions must be taken to ensure a gradual temperature change so that the hardwood flooring doesn't dry out too quickly. Prior to attempting install over radiant heat, ambient and subfloor requirements must all be met. The heating system must be inspected by a qualified heating installer.

Though not recommended, NAF Engineered Hardwoods' floors can be installed over in-floor radiant heating systems provided that the subfloor surface does not exceed 85°F or (29°C) at any point. The initial floor temperature must not exceed 70°F for 24 hours prior to and 48 hours post installation. Thereafter, the temperature should be gradually increased by no more than 5 °F per day to the desired setting, never exceeding to 85°F. Relative humidity of between 35% and 55% must be maintained before, during, and after the installation.

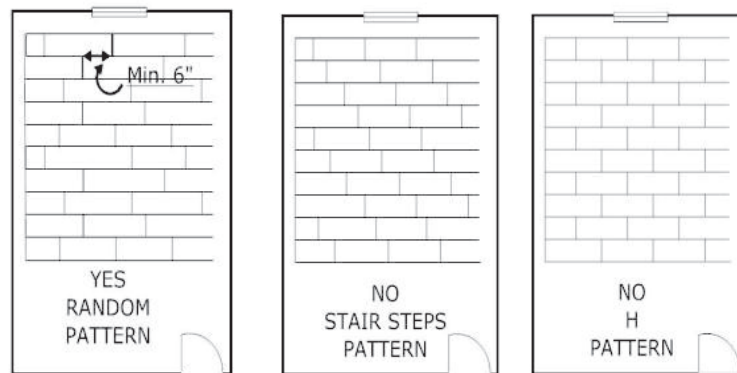
NOTE: Seasonal gapping and face checking of your hardwood floor should be expected with radiant heat installation. Warranty will be voided if an improper installation over radiant heat system is demonstrated.

Preparation Subfloors should be in clean condition

Understand the parts of the locking part of the flooring plank. The tongue is the thinner extension coming out of the side of the planks. The groove is the wider extension coming out of the other side of the floor plank. The ends do not have tongue and groove. There is an upper drop-lock end on one side and a lower drop-lock end on the other side.



Lay out several cartons. Randomly rack planks to ensure good color and shade mixture and end joint spacing. Minimum end stagger is 6". Inspect plank quality and grading.



- Lay out trim moldings in advance and find planks whose shade closely matches. Set these aside for future use.
- Remove existing base, shoe molding or threshold carefully. They can be used to cover the 1/2" expansion gap left around the edge of the room.
- Undercut doors and casings using a handsaw laid flat on a piece of scrap flooring.
- Install moisture barrier on concrete. For concrete, let the moisture barrier run up the wall a bit before cutting to size and tape all seams.
- Install the underlayment (if used) according to underlayment manufacture instructions.

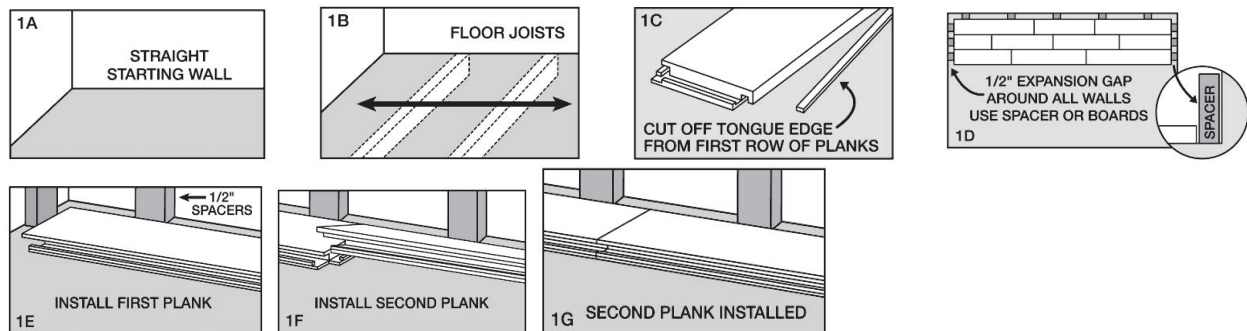
FLOATING INSTALLATION

STEP 1 - INSTALL THE FIRST ROW

- When possible, begin installation from the straightest wall. If possible, install the flooring perpendicular to the joists.
- Cut off the tongue from the first-row planks.
- Allow 1/2" expansion gap between plank and the walls. Use spacers or board.
- Place the first plank with the groove side facing away from the walls.
- Place the upper drop-lock end of the second plank on the lower drop-lock end of the first plank.

The ends do not click lock. Maintain straight edge along the rows.

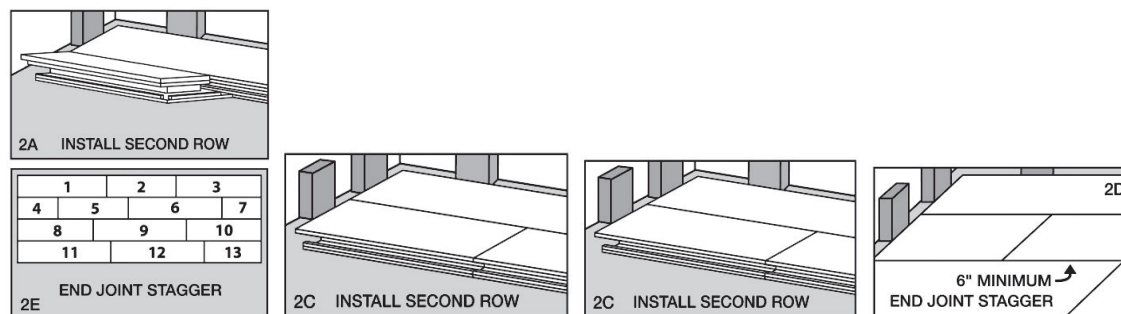
- Continue placing the succeeding planks to complete the row.



STEP2 - INSTALL THE SECOND AND REMAINING ROWS

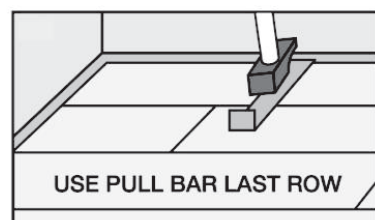
- Cut off a section the first plank lengthwise to ensure 6" joints staggering.
- Hold the plank with the tongue facing the previous row. Keep it at about 30° angle.
- Insert the tongue into the groove.
- Make sure the tongue is snugly and securely engaged in the groove by exerting a constant pressure in the direction of the groove.
- Maintain the pressure while pressing the plank flat to lock the edge joints.

If there is a slight gap along the edge joints, it can be eliminated with the help of a tapping block and a plastic mallet. Use caution to prevent impact damage.



STEP3 - INSTALL THE LAST ROW

- Use the pull bar to draw the last row to fit tightly to the previous row.



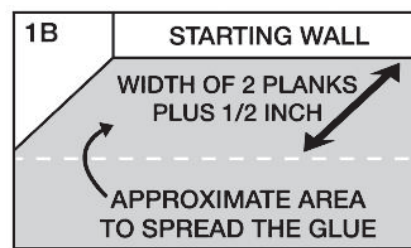
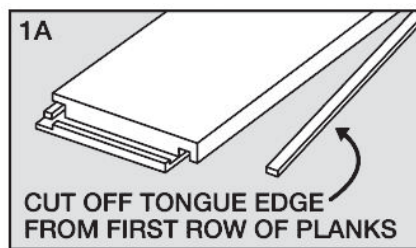
GLUE DOWN INSTALLATION

PLEASE NOTE: ANY EXCESS GLUE WHICH GETS ONTO THE SURFACE OF THE FLOOR MUST BE REMOVED IMMEDIATELY WITH ADHESIVE REMOVER

The steps in glue down method are very similar to the floating installation method. The only difference is the application of the glue to the subfloor prior to installation. For more detail instruction, see the floating installation section above.

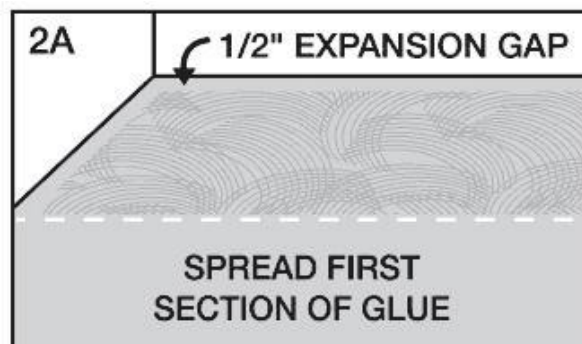
Step 1 Set up

- Cut off the tongue from the long edge of the boards for the first rows.
- Ensure expansion gap by marking off a starting line 1/2" away from the starting wall. Mark off approximately 2 planks width area to spread glue.



Step 2 - Spreading the glue

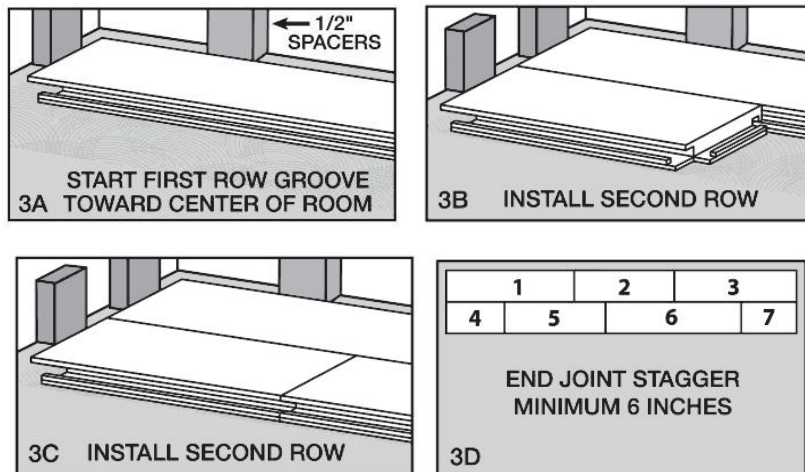
- Spread the glue from the starting line out in the direction of the center of the room, the width of two planks. Or spread only enough glue to install what can be set within 45 minutes (15 minutes of OPEN TIME and an additional 30 minutes for actual installation. Usually about two rows width coverage). Different manufacturer may require different open time and set time. Use spacers or boards to maintain expansion gap during installation.
- Repeat with the next two rows, etc.



Step 3 - Install the first two rows

- Install the first row of starter planks.
- The last plank of the first row may have to be cut to size. Discard remainder because the tongue has been removed.

- Install the second row. Make sure there is a random staggering at the end joints of at least 6" apart.
- Be attentive to staggering the ends of the boards correctly in adjacent rows to avoid clustering end joints. Any glue that comes in contact with the face of the board should be removed immediately using adhesive remover formulated for the glue being used. Follow adhesive manufacturer's instruction on adhesive removal.



Step4 - Install the remaining Rows

- Spread another section of glue. Never spread more that can be covered before the adhesive is set. If adhesive is set and will not transfer to the back of the plank, scrape off the adhesive and apply fresh adhesive.
- Continue to install the next rows. Make sure there is a random staggering at the end joints of at least 6" apart.
- Maintain 1/2" expansion gap between floor and the walls.
- Repeat the process for additional rows.
- Make sure that there is 100% contact between the wood floor and the adhesive.

