



Installation Instructions 2G

Prefinished Engineered Plank

PLEASE READ THE ENTIRE INSTALLATION INSTRUCTIONS BEFORE PROCEEDING WITH THE ACTUAL INSTALLATION

OWNER / INSTALLER RESPONSIBILITY

- Hardwood flooring is a product of nature that is characterized by distinctive natural variations in grain and color and are not considered flaws. This hardwood flooring is manufactured in accordance with accepted industry standards, which permit a grading defect tolerance not to exceed 5%. The defects may be of a manufacturing or natural type.
- The owner/installer assumes all responsibility for final inspection of product quality. This inspection of all flooring should be done **before** installation. Carefully examine the flooring for color, factory finish, grade, and quality before installing it. Do not install (or cut off) pieces with glaring defects whatever the cause. If material is not acceptable, contact your distributor or dealer immediately before installation. Installation implies acceptance. No warranty will be offered for material with visible defects once the product is installed.
- Before beginning the installation of any hardwood flooring product, the installer must determine that the environment of the job site and the condition and type of the sub floor involved is acceptable, insuring that it meets or exceeds all requirements, which are, stipulated in the installation instructions which follow. The manufacturer declines any responsibility for job failure resulting from or associated with inappropriate or improperly prepared sub floors or job site environment deficiencies.
- The use of stain, filler, or putty stick for the correction of defects, small cracks, or face nail holes during installation should be accepted as normal procedure.
- When ordering, 5-10% must be added to the actual square footage amount needed for grading and cutting allowances.
- We strongly recommend that you visit the NWFA website at woodfloors.org/consumer for installation help and maintenance tips.

JOB SITE INSPECTION & ACCLIMATION

- In new construction, hardwood flooring should be one of the last items installed. All work involving water or potential ground debris (plumbing, dry wall, etc.) should be completed prior to wood flooring being installed. Heating and air systems should be fully operating, maintaining a consistent room temperature at 60-80° F and a constant relative humidity of 35-55%.
- Flooring should not be delivered until the building has been closed in and cement work, plastering, painting, and other materials are completely dry. New concrete and plaster should be cured and at least 60 to 90 days old.
- Check basements and under floor crawl space to be sure that they are dry and well ventilated to avoid damage caused by moisture. Crawl spaces must have a black polyurethane film as a vapor barrier.
- Flooring should be at the job site at least 48 hours prior to installation. **Do not open cartons until ready to install, as engineered floor does not need to acclimate.**
- Handle with care. Do not stand on ends. Store flooring in a dry place, being sure to provide at least a four-inch air space on or around cartons.

- Do not store directly upon on grade concrete or next to outside walls. Cartons should be placed in the installation area.
- The installation site should have consistent room temperature of 60 -80 ° F and a constant relative humidity level of 35-55% for a minimum of 5 days prior to installation of any flooring product.
- Engineered flooring is for below grade, on grade or above grade installation only and **cannot** be installed in full bathrooms or other high moisture areas.
- Some Engineered Flooring can be installed over Radiant Heat using the floating floor method on or above grade. See approved species below or check with your distributor.

SUB FLOOR PREPARATION

APPROVED SUB FLOOR TYPES:

- 1) Agency approved 5/8' (19/32") minimum thickness or 3/4" (23/32") CDX Exposure 1 plywood 16" on center floor joists properly nailed.
- 2) Agency approved 3/4" (23/32") underlayment grade OSB Exposure 1 16" center floor joists properly nailed.

Note: When installing approved plywood or OSB, refer to specific structural panel manufacturer's instructions for fastening and spacing.

- 3) Agency approved underlayment grade particleboard.
- 4) Existing wood floors (installed at right angle only).
- 5) Concrete Slab
- 6) Resilient tile, sheet vinyl, and ceramic tile only over a above mentioned and approved sub floor.

SUB FLOORS MUST BE:

- **CLEAN** - Scraped or sanded, swept, free of wax, grease, paint, oil, previous or existing glues or adhesives, and other debris
- **SMOOTH/FLAT** - Within 1/8" on 6' radius. Sand high areas or joints, fill low areas (no more than 1/8") with a cement type filler no less than 3000 p.s.i. Any irregularities may cause hollow spots between the flooring and sub floor in any installation method and are not warranted.
- **STRUCTURALLY SOUND** - Nail or screw any loose areas that squeak. Replace any delaminated or damaged sub flooring or underlayment.
- **DRY** - Moisture content of sub floor **must not** exceed 14% prior to installation of wood flooring. All moisture testing must be before wood has been acclimated 48 hours and job site requirements met.

WOOD SUBSTRATES: Test the moisture of the wood substrate 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 a 4% difference than moisture content of products being installed.

CONCRETE SLABS (regardless of existing floor covering): All concrete sub floors must be tested for moisture content prior to installation of the hardwood flooring. The moisture content of the concrete sub floor must not exceed 3 lbs. /100 sq. ft. emissions

Below are methods to test to indicate moisture is present in the concrete sub floor:

- 1) Use an approved calibrated concrete moisture meter (such as Delmhorst Moisture Meter Model G or Tramex Concrete Encounter) as a preliminary measurement for moisture. Follow manufacturer's specific calibration requirements.
- 2) Perform a polyfilm test. Tape down 2' x 2' polyfilm squares (a clear garbage bag or plastic drop cloth will do) in several



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places on the floor. Wait 24-48 hours, and then check for the appearance of condensation on the inside of the bag or plastic for a darkening on the concrete sub floor. Either occurrence signals the likely presence of excess moisture, requiring a mandatory calcium chloride test.

- 3) Once you have determined the moisture content and that moisture is present a calcium chloride and pH alkalinity test **must** be performed to determine the moisture emissions through the concrete slab of the moisture and alkalinity in the concrete floor.
- Perform a calcium chloride test according to the manufacturer's instructions. The maximum acceptable reading is 3-lbs. /24 hours/1000 sq. ft. for moisture emissions.
 - Perform a pH alkalinity test according to the manufacturer's instructions. A pH reading of 6-9 on a pH number scale of 1-14 is acceptable.
 - If the test results exceed this number the concrete slab should be sealed with appropriate sealers to correct those emissions as per the manufacturer's recommendations.

Note: If excessive moisture is present or anticipated, use a moisture retardant system of inexpensive sheet vinyl/slip sheet to reduce vapor intrusion.

Note: If a sub floor has been flooded or rained upon, it may not be suitable to install flooring.

INSTALLATION on WOOD SUBSTRATE:

Note: Do not use the staple or nail down installation method on underlayment grade particleboard

Sub floor should be constructed of 5/8" (19/32") or thicker plywood or 3/4" (23/32") OSB when installing directly over minimum 2 x 10 floor joists 16" on center. For up to 19.2" on center 3/4" (23/32") plywood or OSB should be used. For 19.2" to 24" on center 7/8" plywood or OSB should be used. Structural Panels must be installed sealed side down. 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. Edge swell should be flattened. The moisture content of the wood or plywood should not exceed 14%.

INSTALLATION on CONCRETE SLABS:

All concrete sub floors should be tested for moisture content. New concrete slabs require a minimum of 60 days curing time before installation. Concrete sub floors must be free of existing adhesives, grease, oil, dirt, and curing compound. These may be removed chemically or mechanically, but do not use a solvent based stripper. The residual solvents can prohibit satisfactory bond of floor adhesives, the concrete, and the flooring. To ensure a lasting bond make sure the perimeter of the foundation has adequate drainage and vapor barrier. Apply a liquid based moisture vapor barrier coating to the subfloor. Over concrete use only concrete moisture sealer systems that are specifically designed for moisture suppression and adhesive bonding properties. Follow manufacturer's guidelines and recommendations. The

underlying floor must be permanently dry and protected against moisture.

If this requirement is not met, the planks can swell, shrink and warp and may void the warranty.

Note: LIGHTWEIGHT CONCRETE: Lightweight concrete has a dry density of 100 pounds or less per cubic foot and is only suitable for engineered wood floors when using the floating installation method. Many products have been developed as self-leveling toppings or floor underlayment. These include cellular concrete, resin reinforced cementations, underlayments and gypsum-base materials. Although some of these products may have the necessary qualifications of underlayment for wood flooring installation, others do not. To test for lightweight concrete, scrape a coin or key across the surface of the sub-floor. If the surface powders easily or has a dry density of 100 pounds or less per cubic foot, use only the floating installation method.

INSTALLATION on SUB-FLOORS OTHER THAN WOOD OR CONCRETE:

Do not install over carpets.

Note: Perimeter glued resilient vinyl and rubber tiles are unacceptable underlayments and must be removed.

Terrazzo, marble, tile and any other hard surfaces that are well bonded to sub floor, dry, structurally sound and level, as described above, are suitable as a sub floor for this engineered hardwood flooring installation. As above, the surface must be sound, tight, and free of paint, oil, existing adhesives, sealers, wax, grease, and dirt. Terrazzo, marble and ceramic tile must be scuffed to assure adhesion.

The flooring can be glued or floated directly over full spread permanently bonded acoustical cork. Density should be 11.4 lb. / cubic ft. and installed according to cork manufacturer's recommendations. Do not use foam underlayment when using the floating method over cork.

WARNING! Do not sand existing resilient tile, sheet flooring, backing, or felt linings. These products may contain asbestos fibers that are not readily identifiable. Inhalation of asbestos dust can cause asbestosis or other serious bodily harm. Check with local, state, and federal laws for handling hazardous material before attempting the removal of these floors.

INSTALLATION ON RADIANT HEATED SUBFLOORS:

- Use floating floor installation only. Do not use the glue down or staple installation method on radiant heat flooring.
- Only Elm, Maple, or Birch are approved for use on radiant heat applications. Do not use Oak, Hickory, or any Exotic Specie.
- Warranty will be voided if anything other than approved species or installation method is used

JOB SITE PREPARATION

- Verify floor is level and structurally sound. Repair as needed. Sub floor irregularities may cause any wood flooring installation to develop hollow spots between the flooring and the sub floor. These are not the result of any manufacturing defect.
- Undercut door casings
- Remove any existing wall base, shoe molding, quarter round or doorway thresholds
- Regardless of the installation method all floors should be racked.

FLOATING FLOOR INSTALLATION

REQUIRED TOOLS AND ACCESSORIES

- * Tape Measure
- * Moisture Meter (wood / concrete)
- * Mallet (light colored)
- * Circular or Hand Saw
- * Miter or Table Saw
- * Drill with 1/16" bit
- * Tapping Block
- * Chalk Line and Chalk
- * Hammer
- * Safety Equipment (Goggles & Mask)
- * Utility Knife
- * 3/8 "or 1/2" Spacers
- * Hardwood Flooring Cleaner
- * Broom
- * Foam Underlayment
- * 6 mil polyethylene film
- * Clear Packing Tape

When installed using the floating installation method all sub floors should be covered with either a 3 in 1 Underlayment or an approved 1/8" thick closed cell foam underlayment following the instructions inside the packaging. When using a 1/8" thick closed cell foam underlayment over a concrete sub floor, you must also use a 6 or 8 mil polyethylene film which acts as a vapor barrier.

All engineered products when installed using the floating installation method, can be installed below grade, on grade and above grade. However the following instructions must be followed for below grade installation.

The concrete slab should be sealed or painted with a good concrete sealer. Then the 3 in1 Underlayment or the 6 mil poly film should be installed with ends butted together and taped with a clear 2" packaging tape to prevent any moisture from coming up through the seams. The 3 in 1 underlayment or 6 mil poly film should be lapped up the wall 4" all the way around the room. This can be trimmed off after moldings are installed. If you are using the 3 in1 underlayment, you are ready to begin the installation. However, if you have used the 6 mil poly film, roll out on top of the 6 mil poly film a 1/8" thick closed cell foam, butting the edges but not overlapping.

RADIANT HEAT SUB FLOORS (ELM, MAPLE AND BIRCH ONLY): Follow the below grade instructions (above) for underlayment requirements and installation instructions. Most radiant heat installations call for the requirements below when installing over radiant heat systems. Always refer to the manufacturer of the radiant heating system for detailed instructions.

ONLY ELM, MAPLE OR BIRCH ARE APPROVED FOR USE ON RADIANT HEAT APPLICATIONS. DO NOT USE HICKORY, OAK OR ANY EXOTIC SPECIE. WARRANTY WILL BE VOIDED IF ANTHING OTHER THAN APPROVED SPECIES IS USED.

- The maximum temperature of sub floor under normal use should not exceed 80° F. (Check with heat system manufacturer).
- For correct water temperature inside heating pipes, check with manufacturers suggested guidelines.

- Heating pipes must be covered with 1 1/4" of concrete or minimum 1/8" below bottom side of plywood sub floor. In addition, for plywood sub floor, heat transfer plates or insulation boards must be under pipes.
- Before installation of hardwood flooring, heat systems must be operated at normal living temperature for a minimum of 14 days.
- One or two days before flooring is laid, switch off heating unit. At the time of installation, sub floor must be 64°-68°F.
- The heating system can be restarted one week after installation. Gradually increase the heat as needed over the next 3 to 4 days not to exceed the maximum of 80° F.
- Room temperature should not vary more than 15° F from season to season. 35-55% humidity in home for radiant heated rooms.
- Use floating floor installation only. Do not use the glue down installation method on radiant heat flooring.
- The radiant heat system must not exceed 8 watts per sq. ft. heating capacity.
- Always refer to the manufacturer of the radiant heating system for detailed instructions.

IMPORTANT: DO NOT INSTALL CABINETS OR WALLS ON TOP OF THE FLOORING WHEN USING THE FLOATING INSTALLATION METHOD.

Step 1: GETTING STARTED

Important: The flooring should be installed from several cartons at the same time to insure proper color, grain, and shade mix.

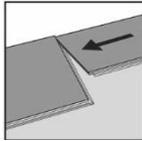
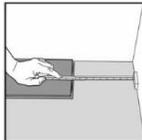
- Before starting, first measure the width of the room, and then divide the room's width by the width of the plank. If this means that the last row of planks will be narrower than 2", then you will need to cut the first row of planks to make it narrower. Cut in such a way that both rows of planks (the first and last to be installed in the room) will have the same approximate width for an overall continuous look. See installing the last row.
Note: To cut the boards, always saw with the teeth cutting down into the face or top of the board. Cutting from the top down helps protect the surface.
- The planks install easily without glue. Simply attach the tongue on one plank to the groove side on another plank and the planks will lock snugly together.



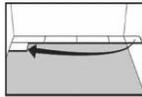
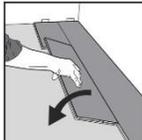
- Begin the installation of the planks in the left hand corner of the room with the long direction parallel to the incoming sunlight source or to the longest wall of the room (if this is possible). Be sure to install the first row of boards with the tongue side facing the wall.
Note: Slightly bowed boards can be installed and are not considered defective.
- Use 3/8" or 1/2" expansion spacers (depending on the thickness of the flooring) to provide a gap for the seasonal expansion of the flooring along the walls of the entire room. Always place expansion spacers against the wall where the two boards meet. This will make maintaining a good square easier.

Note: Larger rooms require additional expansion space. Add 1/16" to the width of the spacers for every 3' the room extends beyond 25'. Dimensions exceeding 40' require the use of a t-molding for expansion.

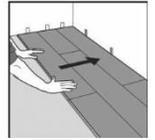
Step 2: POSITION THE FIRST ROW

- Begin installing the first row by laying a plank flat over the underlayment. 
- With the tongue side facing the wall align the end of the second plank with the first and lock the end joints together by pushing it straight down on top of the first plank. 
- Lock the ends of the planks together until the first row is finished. Cut the last board in the row to the necessary length. If leftover plank is 12" or longer use it to begin the next row or use a shorter length board from the box. 
- If the starting wall is out of square, it will be necessary to scribe the first row to match the wall, allowing the opposite side of the row to present a true square base for the rest of the floor. Then the first row is complete, you must have a straight, even base established.

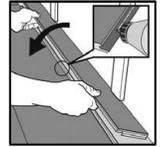
Step 3: INSTALLING THE REST OF THE FLOOR

- Always stagger 12" between the end joints of adjacent plank rows. The end joints should not repeat visually across the installed floor and avoid "H" patterns. 
- After installing the first row of planks, Line up the first plank of the second row so the outside end is even with the outside end of the first plank of the first row.
- Lock the long side of the second row plank onto the plank on the first row by inserting the tongue of the second plank into the groove on the first plank while holding the plank at a 45 degree angle from the floor. Press the second plank down flat and the tongue will lock firmly into place. 
- After locking in place, lay the remaining planks in the row by first locking the long side in place and then tapping the end of the plank to slide firmly into place at its end.
- The planks cannot be forced together. If they are not lying flat then they will not align properly during locking. If this occurs begin again insuring the edges of both planks meet evenly while applying equal pressure while rotating the plank.
- Once the third row has been clicked into place check for a tight fit on sides and ends and that the spacers are in place.

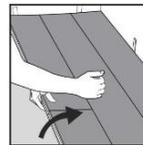
- To install the rest of the flooring, continue placing the boards from left to right, plank by plank, and row by row.



- Under doorjamb or toe kicks of cabinets there is not enough clearance to achieve the 45 angle necessary to engage the sides. The tongue portion of the sides should be cut away using a wood chisel and the boards glued together using high quality white wood (PVAC) glue. Remove any excess glue with a damp cloth.



- To disengage the planks lift the long side to a 45 degree angle and remove. Slide the ends in opposite directions to disengage. Do not pull upwards to disengage the short ends so as not to break them.



Step 4: INSTALLING THE LAST ROW

Most often the entire length of the last row will need to be cut so that it is narrow enough to fit the remaining space. When this occurs, follow this simple procedure:

- Lay a row of boards with the tongue toward the wall, directly on top of the last row installed.
- Take a full width scrap piece of the product that is being installed with the face down and the tongue side against the wall. Use 3/8" or 1/2" spacers against the wall to ensure the proper expansion space.
- Draw a line along the row moving down the wall. The resulting line gives the proper width for the last row which, when cut, can then be wedged into place using the pull bar.

Step 5: FINISHING THE FLOOR

- The use of putty to cover small cracks or face nail holes should be considered normal in hardwood flooring installations.
- Make sure when the installation is complete that the expansion spacers are removed and the expansion space is covered with the appropriate molding such as base board and 1/4 round or shoe molding. Do not nail moldings into the floor but nail into the wall.
- Vacuum the floor thoroughly using the soft brush attachment or dust mop to remove any dirt and debris.
- Use a quality Hardwood Flooring cleaner to finish the floor. We suggest Bona Swedish Formula Hardwood Cleaner.
- If the floor is to be covered do not use plastic use a breathable material such as cardboard or kraft paper.
- Damp mopping, cleaning, furniture or heavy objects can be put back into place immediately after installation.

GLUE DOWN INSTALLATION METHOD

REQUIRED TOOLS AND ACCESSORIES

- * 3/16" x 5/32" deep v notch or 1/4" x 1/4" x 3/16" square notch trowel. Follow adhesive manufacturers' guidelines.
- * High Quality Urethane Adhesive
- * Concrete Sealer
- * Moisture Meter (wood & concrete)
- * Mallet (light colored)
- * Hammer
- * Circular or Hand Saw
- * Utility Knife
- * Miter or Table Saw
- * Pry Bar
- * Drill with 1/16" bit
- * 6-8 d screw shank nails
- * Chalk Line and Chalk
- * Tape Measure
- * Safety Equipment (Goggles & Mask)
- * Nail Punch
- * Broom
- * Hardwood Flooring Cleaner

IMPORTANT: DO NOT INSTALL USING THE GLUE DOWN METHOD OVER RADIANT HEAT

APPROVED SUB FLOOR:

The flooring can be glued directly to a concrete subfloor. Apply a liquid based moisture vapor barrier coating to the subfloor. On concrete subfloors use only a concrete moisture sealer system that is specifically designed for moisture suppression and adhesive bonding properties. The subfloor must be permanently dry and protected against moisture.

All engineered products when installed using the glue down method, can be installed on grade or above grade. However the following instructions must be followed.

Step 1: GETTING STARTED

Important: The flooring should be installed from several cartons at the same time to insure proper color, grain, and shade mix.

- Before starting, first measure the width of the room, and then divide the room's width by the width of the plank. If this means that the last row of planks will be narrower than 2", then you will need to cut the first row of planks to make it narrower. Cut in such a way that both rows of planks (the first and last to be installed in the room) will have the same approximate width for an overall continuous look. See installing the last row.

Note: To cut the boards, always saw with the teeth cutting down into the face or top of the board. Cutting from the top down helps protect the surface.

- The planks install easily without glue. Simply attach the tongue on one plank to the groove side on another plank and the planks will lock snugly together.



- Begin the installation of the planks in the left hand corner of the room with the long direction parallel to the incoming sunlight source or to the longest wall of the room (if this is possible). Be sure to install the first row of boards with the tongue side facing the wall.

Note: Slightly bowed boards can be installed and are not considered defective.

- Use 3/8" or 1/2" expansion spacers (depending on the thickness of the flooring) to provide a gap for the seasonal expansion of the flooring along the walls of the entire room. Always place expansion spacers against the wall where the two boards meet. This will make maintaining a good square easier.

Note: Larger rooms require additional expansion space. Add 1/16" to the width of the spacers for every 3' the room extends beyond 25'. Dimensions exceeding 40' require the use of a t-molding for expansion.

Step 2: SPREADING THE ADHESIVE

I Urethane adhesive is the only recommended adhesive.

- Hold the trowel at a 45-60° angle and spread adhesive onto an area no larger than 30-40 square feet at one time and at a spread rate of 40-60 square feet per gallon.
- After spreading, allow adhesive to flash off for 30-45 minutes before installing wood flooring. Maximum available working time is 45-50 minutes. (Colder temperatures or high humidity will extend times and warmer temperatures or low humidity will shorten times.)
- Do not install the flooring after adhesive dries. Test by touching adhesive. If not readily transferred to finger, adhesive is already dried. If adhesive has dried, remove adhesive and apply new material. Periodically check flooring to confirm 100% adhesive transfer. It is not required but suggested that within one hour of setting wood, roll the installation with a 100-150 lb. roller to promote good contact with the adhesive.
- Always refer to the specific instructions on the hardwood flooring adhesive label.

Step 3: POSITION THE FIRST ROW

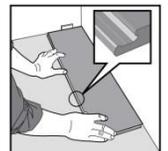
- Install the flooring parallel to the longest outside (exterior) wall in the room. Measure out from the wall on the door side of the room in two places 10 1/2" for 5" wide products. Mark and snap a chalk line across the two marks.

For wood sub floors: If you are working on a wood type sub floor, use small finishing nails to hold the first row in place. Fill nail holes with filler to blend with your flooring.

For concrete sub floors: If you are working on a concrete sub floor, take a piece of 1" x 2" x 8' board and using 1" concrete nails, nail the board onto the dry side of your chalk line.

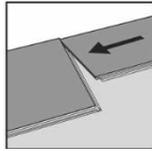
This will hold your first row of starter boards in place.. The area between the chalk line and the wall is the working area and will be the last to be installed.

- After the adhesive has been spread following Step 2, begin installing the first row by paying a plank flat over the adhesive. Install the piece of flooring with the groove towards you and the tongue facing the opposite wall. Line up the groove of the flooring with the chalk line then press the flooring into the adhesive. Begin installing the first row by laying a plank flat over the adhesive.

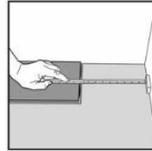


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- With the tongue side facing the wall align the end of the second plank with the first and lock the end joints together by pushing it straight down on top of the first plank.



- Working from left to right, lay the next board and continue working towards the right until you need to cut a piece to complete the first row. Measure the size you need to lock the ends of the planks together until the first row is finished.



Cut the last board in the row to the necessary length. If leftover plank is 12" or longer use it to begin the next row or use a shorter length board from the box.

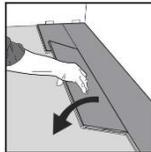


- If the starting wall is out of square, it will be necessary to scribe the first row to match the wall, allowing the opposite side if the row to present a true square base for the rest of the floor. When the first row is complete, you must have a straight, even base established.

Step 3: INSTALLING THE REST OF THE FLOOR

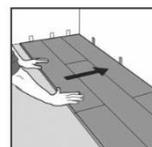
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- After installing the first row of planks, line up the first plank of the second row so the outside end is even with the outside end of the first plank of the first row.

- Lock the long side of the second row plank onto the plank on the first row by inserting the tongue of the second plank into the groove on the first plank while holding the plank at a 45 degree angle from the floor. Press the second plank done flat and the tongue will lock firmly into place.

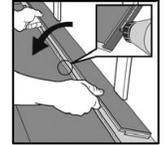


- After locking in place lay the remaining planks in the row by first locking the long side in place and then tapping the end of the plank to slide firmly into place at its end.
- The planks cannot be forced together. If they are not lying flat then they will not align properly during locking. If this occurs begin again insuring the edges of both planks meet evenly while applying equal pressure while rotating the plank.
- Remove and lift a plank periodically to make sure that there is 100% contact between the board and the hardwood flooring adhesive
- Once the third row has been installed check for a tight fit on sides and ends and that the spacers are in place.

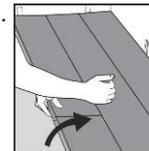
- To install the rest of the flooring, continue spreading the adhesive (Step 2) and placing the boards from left to right, plank by plank, and row by row.



- Clean adhesive from the surface frequently using an adhesive cleaner. Urethane adhesive is difficult to remove when cured. Use clean towels to prevent haze and adhesive residue.
- Under doorjamb or toe kicks of cabinets there is not enough clearance to achieve the 45 angle necessary to engage the sides. The tongue portion of the sides should be cut away using a wood chisel and the boards glue together using a high quality carpenter's glue.



Note: To disengage the planks lift the long side to a 45 degree angle and remove. Slide the ends in opposite directions to disengage. Do not pull upwards to disengage the short ends so as not to break them.



Step 4: INSTALLING THE LAST ROW

Most often the entire length of the last row will need to be cut so that it is narrow enough to fit the remaining space. When this occurs, follow this simple procedure:

- Lay a row of boards with the tongue toward the wall, directly on top of the last row installed.
- Take a full width scrap piece of the product that is being installed with the face down and the tongue side against the wall. Use 3/8" or 1/2" spacers against the wall to ensure the proper expansion space.
- Draw a line along the row moving down the wall. The line gives the proper width for the last row which, when cut, can then be wedged into place using the pull bar.
- Remove and lift a plank periodically to make sure that there is 100% contact between the board and the hardwood flooring adhesive.

Step 5: FINISHING THE FLOOR

- The use of putty to cover small cracks or face nail holes should be considered normal in hardwood flooring installations.
- Make sure when the installation is complete that the expansion spacers are removed and the expansion space is covered with the appropriate molding such as base board and 1/4 round or shoe molding. Do not nail moldings into the floor but nail into the wall.
- Vacuum the floor thoroughly using the soft brush attachment or dust mop to remove any dirt and debris.
- Use a quality Hardwood Flooring cleaner to finish the floor. We suggest Bona Swedish Formula Hardwood Cleaner.
- If the floor is to be covered do not use plastic use a breathable material such as cardboard or Kraft paper.
- Damp mopping, cleaning, furniture or heavy objects can be put back into place 2 hours after installation.

CAUTION: WOOD DUST WARNING

The State of California (OEEHA Prop 65, California Health and Safety Code Section 25249.6) has classified Wood Dust as a substance known to cause cancer. Drilling, sawing, sanding, or machining wood products generates wood dust.

The State of Minnesota (Statute 1984 sections 144.495 and 325F.18) require all HDF and plywood sold or used in Minnesota meet the HUD Formaldehyde Emission Standard 24 CFR Sections 3280.308 and 3280.406.

Airborne wood dust may cause lung, upper respiratory tract, and eye and skin irritations. Some wood species may cause dermatitis and /or respiratory allergic reactions. The International Agency for Research on Cancer (IARC) has classified wood dust as a nasal carcinogen in humans. Wood dust can also cause a flammable or explosive hazard

Precautionary Measures:

- Recover dust for disposal. Sweep or vacuum dust for disposal or if power tools are used equip them with a dust collector.
- Avoid dust contact with an ignition source
- Avoid prolonged or repeated breathing of wood dust in air. If there are high levels of dust then use an NIOSH- designated dust mask.
- Avoid dust contact with eyes and skin

First Aid Measures:

- If inhaled, move to fresh air. In case of contact flush eyes and skin with water. If irritation persists, call a physician.

Please contact your dealer or distributor to request a Material Safety Data Sheet (MSDS)

IMPORTANT Note: The information and data above is based on the experience of occupational health and safety professional. It comes from sources believed to be accurate or otherwise technically current. It is the user's responsibility to determine if this information is suitable for specific application and to follow any necessary safety precautions.

CARE GUIDE

CLEANING YOUR FLOOR

- Use a damp cloth to blot up spills and spots as soon as they happen. For tough spots such as oil, paint, markers, lipstick, ink, tar or cigarette marks, use acetone/nail polish remover then wipe with a damp cloth. Always avoid allowing liquids to stand on your floor.
- Vacuum, (using the hard floor attachment not the beater bar), dust mop or sweep the floor to minimize abrasive grit , debris, and dirt
- Occasionally wipe the floor with a damp mop or cloth
- Periodically clean the floor with a hardwood flooring cleaner, which is specially formulated for the finish. We recommend Bona Swedish Formula Hardwood Cleaner.
- **Do not** use oil based, wax, and polish, strong ammoniated or abrasive cleaners, steel wool or scouring powder to clean the floor.
- **Do not** wash or wet-mop the floor with soap, water, oil soap detergent or any other liquid cleaning material. This could cause swelling warping, delamination and joint-line separation, and void the warranty.
- Do not use any type of buffing machine.

PROTECTING YOUR FLOOR

Use quality area rugs and doormats by outdoor entrance areas to prevent dirt, sand, grit and other substances such as oil, asphalt or driveway sealer from being tracked onto our floor. The rugs must be made of a breathable material to

- Sweep, dust, or vacuum the floor regularly to prevent accumulation of dirt or grit that can scratch or dull the floor finish.
- Use protective casters/caster cups or felt pads on the legs of furniture to prevent damage to the flooring. Use wide bearing leg bases, barrel type caster wheels, rubber rollers to minimize indentations and scratches from heavy objects. As a rule of thumb, the heavier the object, the wider the floor protector should be. Make certain to keep them clean and well maintained.
- Do not use rubber or foam backed plastic mats as they may discolor the floor. To prevent slippage use an approved vinyl rug underlayment
- Maintain a normal indoor relative humidity level between 35 and 55% and a temperature of 60°-80° F throughout the year, to minimize the natural expansion and contraction of wood.

Heating Season (Dry): humidifier is recommended to prevent excess shrinkage due to low humidity levels. Wood stove and electric heat tends to create very dry conditions.

Non-Heating Season (Wet): An air conditioner or dehumidifier or periodically turning on your heating system can maintain humidity during the summer months. Avoid excessive exposure to water during periods of inclement weather.

- Avoid gouges or cuts in your floor from sharp objects. While your floor is one of the most wear resistant floors on the market, sharp or pointed objects can nevertheless damage it.
- Don't walk on your floor with stiletto-style heels, spiked shoes, or cleats; they may cause indentations in your floor.
- Keep pet's nails trimmed to minimize finish scratches. Rearrange area rugs and furniture periodically so the floor ages evenly. UV sunlight will soften the tone of different species of hardwood to varying degrees.
- Protect your floor from direct sunlight. Use curtains and UV resistant film on large glass doors and windows
- Use a dolly when moving heavy furniture or appliances. But first, put down a sheet of quarter inch plywood or Masonite to protect the floor and help prevent denting. Carpet or cardboard is not adequate to prevent surface compression scratches. Never try to slide or roll heavy objects across the floor to avoid denting.

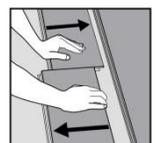
REPAIRING YOUR FLOOR

- Minor damage can be easily repaired with finishing putty available in blending colors.
- Retain several planks for future repairs.
- Major damage will require board replacement. If using the floating installation only, your floor can easily be disassembled to allow for replacement .

To disengage the planks lift the long side to a 45 degree angle and remove. You may need to gently knock just above the joint.



Slide the ends in opposite directions to disengage. Do not pull upwards to disengage the short ends so as not to break them



MOLDINGS

Installation Tips:

- Moldings must be predrilled avoid splitting whenever they are to be secured with nails or fasteners. Use a 10 or 12" miter saw with pre-set adjustments for the basic miter cuts at 22.5°, 45°, and 90°. A carbide tipped blade makes the best cuts.
- On Wall Base or Quarter Round moldings, never restrict the hardwood floor's natural contraction/expansion movement by driving the fasteners at a downward angle. Rather, attach the moldings to the wall or vertical surface.
- Always miter cuts rather than having butt cuts when splicing. Decide the direction of the miter by cutting the molding with the long point oriented in the same direction as your natural line of vision when you enter the room.

Wall Base - Borders the wood floor at the base of the wall to give the room a finished look. This molding conceals the required expansion space between the wall and the hardwood flooring. It is also sometimes used under cabinets and toe kicks.

Quarter Round - This molding conceals the required expansion space between the wall and the hardwood flooring. It is also sometimes used under cabinets and toe kicks where a wall base won't fit or at the base of the stairs to provide a subtle blend between the floor and the wall or vertical surface.

Threshold - Typically used at exterior doorways as a transition between flooring and the doorway threshold. It is also used to transition a wood floor to different floors to make them fit together perfectly, such as high pile carpeting or tile. Another typical use for a threshold is to conceal the expansion space between the flooring and a vertical surface such as fireplace hearths and sliding glass doors.

T-Molding - Commonly used in doorways to join two wood floors in adjoining rooms. Also recommended when making transitions from a wood floor to another floor that is approximately the same height such as ceramic tile, hardwood or laminate floors, not carpet. T-Moldings are also used to provide expansion joints when a floor dimension exceeds the length of 40' or a width of 30'.

Reducer - Used to join hardwood floors that have been glued down or nailed down with floors of different heights such as vinyl, ceramic tile, or low pile carpeting.

Stair Nose - Provides the proper transition for stairways or steps which have hardwood floors that have been installed by either the nail down or glue down installation method. The Stair Nose also provides the proper overhang for a transition from one floor level to the next such as the step into a sunken living room.