



# GARRISON

INSTALLATION INSTRUCTIONS

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ENGINEERED HARDWOOD FLOORING

# Engineered Hardwood Flooring Installation Instructions

*Installation is the responsibility of the Homeowner, Installer, Turnkey Retailer, and Contractor. Garrison Collection assumes no liability for any installation. It is the responsibility of the installer to ensure the job site conditions and method/manner of installation meets all criteria acceptable to The National Wood Flooring Association (NWFA) as well as those listed in these instructions. Only a qualified professional hardwood flooring installer should perform your hardwood flooring installation. These installation guidelines should be followed carefully to ensure the proper installation of your new Garrison hardwood floors.*

## PRODUCT INSPECTION

Beautiful hardwood floors are a product of nature and therefore, are not perfect. Garrison Collection hardwood floors are manufactured in accordance with accepted industry standards, which permit a defect tolerance not to exceed 5%. The defects may be of a manufacturing or natural manner.

- A. It is strongly suggested that upon delivery of product to the jobsite, two or three boxes be opened and laid out before the end user. The end user/homeowner should compare the contents of each box to their floor sample to verify that it is the expected product. If there is any discrepancy between what was expected/purchased and the actual product received, **DO NOT PROCEED WITH THE INSTALLATION!** Notify the retailer, dealer, and contractor immediately.

### **INSTALLATION IS ACCEPTANCE!**

- B. Individual wood products may vary due to dye lot changes in the staining process. Garrison Collection cannot honor claims resulting from a lack of on-site product inspection/acceptance by the homeowner/purchaser.
- C. The homeowner/installer should perform a final inspection of all boxes delivered to the jobsite to ensure expected quality in manufacturing and factory finish. **The installer must use reasonable selectivity and hold out or cut off pieces with defects, whatever the cause.** Garrison Collection shall not accept responsibility for the installation of flooring with visible defects. The use of stain, filler, or putty stick for the correction of minor defects during installation should be accepted as normal procedure.
- D. Before installing Garrison Collection hardwood flooring, the installer and homeowner should verify that the jobsite and subfloor conditions meet all installation requirements as outlined here. Our Limited Warranty does not cover flooring failures resulting from poor jobsite and/or poor subfloor conditions.

## TOOLS NEEDED FOR INSTALLATION

Generally, the tools needed for installation include:

- Handsaw or power saw
- Rubber mallet
- Crowbar or pull bar
- Measure
- Pencil
- Chalk line
- Wood or plastic spacers
- Tapping block
- Adhesive trowel
- Carpenter's square
- Urethane or polymer hardwood flooring adhesive as warranted by Garrison Collection

### CAUTION: WOOD DUST / PROPOSITION 65 WARNING!

**The International Agency for Research on Cancer has classified wood dust as a nasal carcinogen. The sawing, sanding, and/or machining of wood products can produce wood dust that can cause respiratory, eye, and skin irritations. Equipment should be equipped with a dust collector to reduce airborne wood dust. Wear an appropriate NIOSH designated dust mask to reduce exposure to airborne wood dust. Avoid contact with eyes and skin. In case of irritation, flush eyes or skin with water for at least 15 minutes. In case of severe irritation, seek immediate medical attention.**

**Attention for 5" and Wider Planks:** For all planks that are 5" and wider, planks MUST be glued or glue-assist to resist squeaks and heavy movement.

## PRE-INSTALLATION & JOBSITE REQUIREMENTS

All issues involving water or moisture should be resolved prior to the installation of Garrison Collection hardwood flooring. As a general rule, for any new construction or remodeling project, pre-finished hardwood flooring should be one of the last items installed. For best results:

- A. The jobsite should be monitored for consistent, normal room temperature between 60°-80°F.
- B. The jobsite should be monitored for relative humidity between 35%-55%.
- C. Acclimate as necessary.
  1. Failure to maintain proper temperature and humidity levels may cause damage to your Garrison Collection hardwood floor. Such damage would not be covered under Garrison Collection limited warranty.
- D. Garrison Collection hardwood floors must not be stored directly on concrete or near outside walls.
- E. It is not recommended to install Garrison Collection hardwood flooring in areas subject to repeated moisture, such as bathrooms or laundry rooms.
- F. Garrison Collection hardwood floors are recommended for interior and residential on grade or above grade applications.
- G. If installing your hardwood flooring below grade, such as a basement, please see the following recommendation:
  1. A floating installation is recommended along with proper consideration for possible moisture issues, including the use of a fully warranted moisture barrier between the subfloor and the Garrison Collection hardwood floor product.

## Garrison Collection hardwood flooring is not warranted over radiant heat.

If you choose, at your own discretion, to install any of our flooring products over radiant heat, please follow the following procedures and information for best results. For either gluing or floating floors:

- A. The radiant heating system must be operational and heated for at least **7 days** prior to the installation.
- B. Use an incremental control strategy that brings the floor through temperature changes gradually, which may include an external thermostat.
- C. Turn off heat and let subfloor cool down to room temperature 3-4 hours prior to starting the installation.
- D. Before installation begins, verify that the heating system is designed and controlled for wood flooring and that the circuit does not include other floor-covering types. **Failure to do so may cause excessive heat damage and shrinkage.**
- E. After installation, turn the system back on immediately.
- F. The finished floor surface temperature should not exceed 75°F throughout the life of the floor.
  1. Radiant heating systems normally create dry heat that can lower the interior humidity levels.
  2. It may be necessary to add humidity with humidifiers to maintain the recommended levels of humidity (35% to 55%) and prevent damage to the wood floor.
  3. Double gluing of grooves and tongues (top and bottom) as well as the end joints gluing is required for a stronger bond.

## ACCLIMATION PROCESS/JOBBSITE CONDITIONS

Do not open cartons of Garrison Collection hardwood flooring until the day of installation.

- A. Always store unopened cartons on a flat surface and protect the cartons from moisture.
- B. The jobsite should have a consistent room temperature between 60°-80°F.
- C. The relative humidity should be maintained between 35-55%, before, during, and after installation.
- D. Do not open the cartons or take the planks out until the wood floor is acclimated and ready to be installed. This process may take several days.
- E. Room temperature and humidity level in the installation environment is a major part of the acclimation process. The humidity level must stay consistent during the life of the wood floor.
- F. Never have flooring material delivered to a jobsite that does not have doors and windows installed.
  1. All "wet work" (i.e., painting, drywall, concrete, masonry, plumbing) must be complete and dry well in advance of delivery of the hardwood flooring.
  2. Gutters and downspouts should be in place and the exterior grade complete to allow for proper drainage of water away from the building's exterior perimeter.
- G. Flooring should not be exposed to extreme humidity or moisture.
  1. Permanent HVAC should be on and operational for a minimum of 5 days prior to having the hardwood flooring delivered.
  2. The jobsite should have a consistent room temperature between 60°-80°F.
  3. The relative humidity should be maintained between 35-55%, before, during and after installation of the flooring.

- H. It is the installer/owner's responsibility to ensure that the jobsite's conditions and the jobsite's subfloor are environmentally and structurally acceptable prior to the installation of any hardwood flooring. **Garrison Collection declines any responsibility for failures or deficiencies of hardwood flooring resulting from or related to subfloor, subsurface, or the jobsite's environmental conditions.**

### Subfloors:

- A. Subfloors must be clean and free of dirt, curing compounds, sealers, drywall mud, paint, wax, grease, urethane, or other materials that may affect the integrity of the flooring material or adhesives used to install the flooring.
- B. All subfloors must be flat to a maximum height variation of 1/8" in a 6' radius or 3/16" in a 10' radius, dry, and structurally sound.

### Concrete Subfloors:

- A. Concrete slabs should be of high compressive strength and constructed to prevent groundwater from permeating the concrete. All acceptable concrete slabs are those which have been cured for at least 60 days and have a minimum of 6-mil polyethylene film moisture barrier between the ground and the concrete.

### Acceptable Moisture Tests For Concrete Slabs Include:

- **Calcium Chloride test.** A moisture transfer reading that exceeds 3lbs/1000 sqft. with this test requires the use of a warranted moisture barrier. Do not install flooring over any slab that gives a reading over 6lbs/1000 sqft; and
- **Relative Humidity probe test.** Humidity must not exceed a maximum reading of 75%
- **Perform at least three tests in different areas of the first 1000 sqft. and one more for each 1000sqft. following that.** Tramex concrete moisture encounter meter can be used only as a preliminary moisture test: Moisture reading should not exceed 4.5 on the upper scale.

**NOTE:** A "DRY" SLAB, AS DEFINED BY THESE TESTS CAN BE WET AT OTHER TIMES OF THE YEAR. THESE TESTS DO NOT GUARANTEE A DRY SLAB. ALL CONCRETE SLABS SHOULD HAVE A MINIMUM OF 6-MIL POLYETHYLENE FILM MOISTURE BARRIERS BETWEEN THE GROUND AND THE CONCRETE.

## Preparing for Installation

- A. Undercut all door casings 1/16" higher than the thickness of the flooring being installed. To do this:
  1. Use a scrap piece of flooring as a guide.
  2. Lay it on the substrate and cut the casing with a handsaw or use a power jamb saw set at the correct height.
  3. Remove door thresholds and base moldings and replace after flooring installation.

## STARTING INSTALLATION

For aesthetic purposes, hardwood flooring is often laid to the longest wall. However, the homeowner upon the advice of the professional installer should make the final decision on which direction the planks will run.

- A. Most professional installers will begin installation next to an outside wall, which is usually the straightest wall and used as a reference point in establishing a straight working line. A good way to establish a working line is to:
  1. Measure an equal distance from the wall at both ends and snap a chalk line.
  2. Measure the distance from the wall at the width of the plank plus another 1/2" or more for expansion space when establishing your working line. It is advisable to dry-lay a few rows before actually using glue to confirm your directional layout decision and work.
  3. Adjustment of the working line may be

necessary if the outside wall or other working line reference is out of square. This can be done by scribe cutting the first row of planks to match the wall and creating a straight working line.

### **Blending of Cartons:**

To achieve a uniform appearance across the entire floor, we highly recommend that you open and work from several cartons of Garrison Collection hardwood flooring at a time.

- A. Mix the planks from several cartons and dry-lay the flooring. This will allow you to blend the planks for maximum aesthetic appearance.
- B. It is imperative that you make certain the room is well lit to ensure color is consistent and that any visual defects can be seen and removed.

### **Matching Transition Moldings:**

For best appearance, blend all transitions and moldings to planks that have similar color and graining. Set the moldings and matching planks aside for use as needed.

### **Layout of Flooring:**

"Racking the Floor" is essential to achieve a random appearance.

- A. Start by either using random length planks found in the carton or by cutting four or five planks in random lengths, differing by at least six inches.
- B. As you continue working across the floor try to maintain a six-inch minimum between end joints.
- C. Randomly install different lengths to avoid a patterned appearance.
- D. Never waste materials; the end cuts from starter rows should be used at the opposite side of the room to complete rows or used to start the next row.

### **Expansion Space:**

Expansion space around the perimeter is required and

should be equal to the thickness of the flooring material.

- A. For floating installation, the minimum is 1/2" regardless of the thickness of the material.
- B. For commercial installations use a minimum of 1/2" expansion.

### Preparing Subfloor:

- A. Grind high spots or use a cement based leveling material (minimum compressive strength 3000 psi) to fill all low spots to a maximum height variation of 1/8" in a 6' radius 3/16" in a 10' radius.
- B. Follow the leveling compound manufacturer's instructions. Leveling compounds must be allowed to thoroughly cure and dry prior to installation of wood flooring.
- C. Garrison Collection engineered hardwood flooring can be installed on, above, or below grade. In addition, it can be installed over above-ground, suspended concrete floors.
  1. The suspended concrete must be a minimum of 1-1/2" thick and must be structurally sound. The exception to this is lightweight concrete (which usually contains high amounts of gypsum) having a density of 100 pounds or less per cubic foot.
- D. Test for lightweight concrete by using a nail to scratch the surface of the concrete. If the concrete crumbles or turns to powder, it is not sound, and you should NOT glue down the hardwood flooring. Instead, use the floating installation method only for lightweight concrete subfloors.

### Wood Subfloors:

- A. Test wood subfloors and wood flooring for moisture content using a pin-type moisture meter.
- B. Take readings of the subfloor - minimum of 20 readings per 1000 sqft.
- C. Average the results. In most regions, a "dry"

subfloor that is ready to work on has a moisture content of 12% or less.

1. For engineered hardwood floors, the wood should be within 4% of the subfloor moisture content.
  2. For solid hardwood floors, the wood should be within 2% of the subfloor moisture content.
- D. Basements and crawl spaces must be dry.
  - E. As required, use a 6-mil black polyethylene to cover 100% of the crawl space earth.
    1. Crawl space clearance from ground to underside of joist should be no less than 18".
    2. Perimeter vent spacing should be equal to 1.5% of the total square footage of the crawl space area to provide cross ventilation.
  - F. The subfloor must be flat, meeting a maximum height variation of 1/8" in a 6' radius or 3/16" in a 10' radius.
  - G. All subfloors and subfloor systems must be structurally sound and must be installed following local building codes. Keep in mind that local building codes may only establish minimum structural requirements of the subflooring system and may not provide adequate rigidity and support for proper installation and performance of hardwood flooring.
  - H. Check the subfloor for any loose areas and secure them down to minimize the chance for squeaking. Whenever possible, install the planks perpendicular to the floor joists for maximum stability.

**The Garrison Collection warranties DO NOT cover any problems caused by inadequate substructures or improper installation over said substructures.**

- I. Subfloor panels should conform to U.S. Voluntary Product Standard PS1-07, Construction and Industrial Plywood and/or US Voluntary PS 2-04 and/or Canadian performance standard CAN/CSA 0325.0-92 Construction Sheathing. Other CSA standards also apply.

## Acceptable Panel Subfloors:

### Truss/joist spacing will determine the minimum acceptable thickness of the panel subflooring.

- A. On truss/joist spacing of 16" o/c or less the industry standard for single panel subflooring is minimum 5/8" (19/32", 15.1 mm) CD Exposure 1 subfloor panels, 4x8 sheets.
- B. On truss/joist spacing of more than 16", up to 19.2" (488 mm) o/c, the standard is nominal 3/4" (23/32", 18.3 mm) T&G CD Exposure 1 Plywood subfloor panels, (Exposure 1) or nominal 3/4" (23/32", 18.3 mm) OSB Exposure 1 subfloor panels, 4'x8' sheets, glued and mechanically fastened.
- C. Truss/joist systems spaced over more than 19.2" (488 mm) o/c up to a maximum of 24" (610 mm) require minimum 7/8" T&G CD Exposure 1 Plywood subfloor panels, (Exposure 1), or minimum 7/8" OSB Exposure 1 subfloor panels, 4'x8' sheets glued and mechanically fastened - or two layers of subflooring or brace between the truss/joist in accordance with the truss/joist manufacturer's recommendations and with local building codes.
- D. Some truss/joist systems cannot be cross-braced and still maintain stability.
- E. For existing wood floors, install new flooring at right angles to the existing flooring. **Do not glue, staple, or nail down hardwood flooring over particle board.** Floating application is acceptable (products 4" or wider). **Do not glue down new flooring over existing glue down hardwood floors.**



## GLUE DOWN INSTALLATION

### **\*SEE ADDITIONAL SECTIONS BELOW FOR NAIL DOWN AND FLOATING INSTALLATION INSTRUCTIONS\***

Prior to installing the flooring, secure a straight edge inside the chalk line to act as a guide and to prevent the row of planks from shifting during installation. The straightedge could be a straight piece of lumber or piece of flooring. Alternatively, the first row can be face-nailed with finishing nails into the wood subfloor or sprig-nailed into a concrete subfloor.

#### **Spreading Adhesive:**

- A. Using Garrison Adhesive or an equivalent adhesive manufacturer's recommended trowel, hold the trowel at a 45° angle to ensure proper spread rate of adhesive.
- B. Apply pressure to allow the trowel to leave ridges of adhesive on the substrate with little adhesive left between the ridges. This will help to achieve the proper spread rate of the adhesive.
  1. Temperature and air flow across the adhesive can have an effect on the open time of the adhesive. Urethane adhesives will have a longer open time in areas of low humidity and will have a shorter open time in areas of high humidity. (See the Garrison Adhesive, or equivalent adhesive, label for further information).

#### **Installing Flooring:**

- A. Spread the Garrison Adhesive from the chalk line/straightedge out to approximately the width of two planks.
- B. Install the first row of starter planks along the chalk line/straightedge and secure into position with the tongue facing the starter wall.

**NOTE:** Proper alignment is critical. Misaligned starter rows may cause side and end gaps to appear

in proceeding rows of flooring.

- C. When you have the starter rows complete, you can begin the next row.
- D. When you are certain the first two starter rows are straight and secure, spread adhesive 2 to 3 feet wide across the length of the room.
  1. As a general rule, never spread more adhesive than can be covered in 30 to 45 minutes.
  2. If the adhesive has skinned over, remove dried adhesive and trowel new adhesive.
- E. Continue to install planks and push them into place.
- F. Place the tongue of the board into the grooves of installed boards and press into the adhesive. As you continue working across the floor try to maintain a six-inch minimum space between end joints.
- G. Randomly install different lengths to avoid a patterned appearance.

**NOTE:** Never strike a rubber mallet or hammer directly on the flooring to engage the tongue-and-groove. This practice can damage the flooring and/or the finish.

- H. Remove excess adhesive from the surface of the installed flooring as you work - this will help to save time. A damp rag with the appropriate adhesive remover or mineral spirits will remove the excess adhesive.
- I. Change towels frequently to avoid leaving a haze on the flooring surface.

#### **DO NOT use water to remove urethane adhesives from the flooring.**

- J. As you approach the end wall it may be necessary to cut the width of the last row - be sure to allow for the expansion space along the end wall.
- K. Once the final cuts are made set planks into place.
- L. After the floor is complete, remove the straight edge and glue down the first two boards.
- M. Roll and cross roll floor with a 100-150 lbs (45-70

kg) roller at the end of the installation to ensure proper transfer of adhesive.

- N. Restrict foot traffic for a minimum of 6-8 hours and wait 24 hours before moving any furniture onto the floor.
- O. To remove excess adhesive that has dried, use the same glue remover but pay close attention not to mar finish from excessive rubbing.

**Final Inspection:**

- A. After the floor has been cleaned, inspect the floor for nicks, scratches, gaps or planks that may have moved during installation, as well as any other imperfections that need attention.
  - 1. Touch up nicks and scratches with touch-up products. In typical climates, the new floor can accept foot traffic within 24 hours.
  - 2. In areas where additional curing time is required, more time may be needed.
  - 3. It is highly recommended to use Garrison (or other) floor protector after flooring installation – never apply any tape (even blue tape) directly to your flooring. It will eventually strip the finish and void your warranty.

## NAIL DOWN INSTALLATION

### Additional Tools and Material Needed:

- Drill
- Tapping Block
- Compressor with air hose and in line regulator
- Pneumatic Nailer/Stapler
- 15 lb. or 30 lb. Felt Paper

Before you begin, please refer to the Pre-Installation & Jobsite Requirements section above.

**NOTE:** Our products are not warranted against squeaking, popping or crackling when using staple-down or nail-down installation methods. Some squeaking, popping or crackling is normal when using staple-down or nail-down installation methods. These symptoms may be aggravated in arid areas or during dry conditions.

### Set Up and Use of Pneumatic Staplers and Nailers:

Minor occasional noises within the flooring are inherent to all staple/nail-down installations and can change as environmental changes occur. This is not a manufacturing defect and is therefore not covered under our warranties.

- A. You can help reduce squeaking, popping, and crackling by being sure that the subfloor is structurally sound, does not have any loose decking or joists, and is swept clean prior to installation.
- B. You should also be sure that your stapler or nailer is setting the fastener properly, not damaging the planks, and that you are using the correct nailing schedule.
  1. When used improperly, staples or cleats can damage the wood flooring. If the tool is not adjusted properly the staples/cleats may not be positioned at the proper angle and cause blistering, peaking, squeaking, or crackling of the floor.
  2. Some models may require the use of an adapter to adjust for proper thickness.
  3. It is recommended to test the tool on a piece of

scrap material first - set the stapler/nailer flush on the tongue side of the plank and install a staple/cleat.

- C. If the staple/cleat penetrates too deeply, reduce the air pressure.
- D. If the staple/cleat is not deep enough then increase the air pressure using an in-line regulator.
- E. The crown of the staple/cleat should sit flush within the nail pocket to reduce squeaking and prevent damage to the flooring.

**NOTE:** Garrison Collection is not responsible for damage caused by the mechanical fasteners.

### Recommended Staples/Cleats for Garrison Collection products:

- Engineered 3/8": 20 gauge, 1" – 1-1/2" length
- Engineered 1/2" – 5/8": 20-18 gauge, 1" – 1-1/2" length
- Engineered 3/4": 18 gauge, 1-1/2" length
- Solid 3/4": 16 – 15.5 gauge, 1.5" – 2" length

### Getting Started:

After the subfloor has been properly cleaned and prepped, cover the subfloor with 15 lb. / 30 lb. asphalt felt paper or any industry approved moisture vapor retarder such as Aquabar. This material will help to keep the floor clean and help to retard moisture from below (there is no complete moisture barrier system for staple or nail-down applications).

- A. Select a starter wall. An outside wall is best: it's most likely to be straight and square with the room.
- B. Measure out from this wall, at each end, the overall width of the plank (board width + tongue + the space needed (3/8" or 1/2") for expansion).
- C. Snap a chalk line from these points, parallel to that wall.

- D. Install the first row of starter planks along the chalk line/straightedge and secure into position with the tongue facing away from the starter wall (toward you).
- E. Drill pilot holes through the face of the plank every 6" (in the dark grain); approximately 1" from the back edge of the board and secure planks with 1" finishing nails.
- F. Remove excess filler from surface.
- G. Blind nail at a 45° angle through the tongue 1"-2" from the end joints and every 6" in between along the length of the starter boards (pre-drill holes to make this easier). Depending on the width of the flooring it may be necessary to do this for the first few rows prior to using a pneumatic stapler/nailer.
- F. As you approach the end wall it may be necessary to cut the width of the last row. Be sure to allow for the expansion along the end wall.
- G. Once the final cuts are made, set the planks into place.
- H. The last few rows will need to be fastened by hand.
  1. To fasten the final planks into place, you must either manually blind-nail and/or face-nail through the surface on the final planks.
  2. Drill pilot holes at a 45° angle to the floor and blind-nail using 1" finishing nails.
  3. Alternatively, drill pilot holes in the face every 6" (try to drill holes into the darker portion of the wood) and install with 1" finishing nails.
  4. Countersink nails and fill with appropriate colored wood filler.
  5. Remove excess filler from surface with a clean rag and proper cleaner.

**NOTE:** Proper alignment is critical. Misaligned starter rows can cause side and end gaps to appear in proceeding rows of flooring.

#### **Installing the Floor:**

- A. Continue to install the flooring, making sure to nail/staple 1"-2" from the ends and every 4"- 6" thereafter.
- B. Make certain the tool is adjusted properly to ensure that the fastener is at the proper angle and is flush within the nail pocket.
- C. As you continue working across the floor try to maintain a six-inch minimum space between end joints.
- D. Randomly install different lengths to avoid a patterned appearance.
- E. If needed, use a tapping block to help engage the boards together until the tongue-and-groove is flush and tight with no gaps present between adjacent planks.

**NOTE:** Never use a rubber mallet or hammer directly on the flooring to engage the tongue-and-groove. This practice can result in damage to the flooring and/or finish.

## FLOATING INSTALLATION

ONLY recommended for Garrison engineered hardwood flooring at least 1/2" thick and at least 4" wide.

### Additional tools & material needed:

- DriTac T&G Adhesive (Or Equivalent)
- Minimum 6-Mil Polyethylene Plastic Sheeting
- Pry/Pull Bar
- Terry Cloth or flannel towels
- Tapping Block & Spacers
- 2-in-1 Foam Underlayment

Before you begin, please refer to the Pre-Installation & Jobsite Requirements section above.

Minimum 6-Mil Polyethylene not required over a vinyl, wood, or a wood product subfloor.

Minimum 6-Mil Polyethylene required over concrete type subfloors - on grade or below grade.

Do not install over carpet. If installing over vinyl, ensure that the vinyl is secure to the subfloor.

Do not install over perimeter glued vinyl. If installing over an existing wood floor, install the flooring at 90° angles to the wood floor. Secure creaking and loose floorboards with screws.

Do not install over wood flooring glued to a concrete subfloor.

Minimum of 1/2" of expansion space required at all vertical surfaces.

**NOTE:** Larger rooms require additional expansion 1/16" to the width of the expansion space for every 3' the room extends beyond 25'. Dimensions exceeding 40' in length or width – it is recommended to use a T-Molding for proper expansion.

### Getting Started:

- Remove all doors and shoe moldings.
- Undercut all door casings 1/16" higher than the thickness of the flooring and underlayment to be installed.
- Place a scrap piece of plank and a sheet of underlayment against the door casing to act as a guide.
- Cut the door casing with a hand saw or power jamb saw set to the correct height.
- Determine which direction to run the planks.
- After determining which direction to run the planks, measure the width of the room (the dimension perpendicular to the direction of the flooring). The last row of the flooring should be no less than 1 1/2" wide; if it is less, cut the width of the starter row to avoid a narrow last row.
- Select a starter wall. An outside wall is best: it's most likely to be straight and square with the room.
- Measure out from the wall, at each end, the overall width of the plank plus 1/2" for expansion.
- If the first row requires ripping, measure from the wall the width of the ripped board plus 1/2" for expansion.
- Snap a chalk line using a brightly colored chalk from these points.

### Install Underlayment:

- Unroll the 6-mil polyethylene sheeting overlapping edges 4" and seal seams with clear plastic tape.
- Allow the poly to run 2" up the wall and trim back after installation of flooring.
- Install 1/8" foam underlayment.

**NOTE:** Use of a floating floor 2-in-1 underlayment may be used. Follow manufacturer's instructions for application installing the 2-in-1 underlayment.

- Prior to installing the flooring, secure a straight edge (starter board) inside the chalk line to act as a guide and to prevent the row of planks from shifting during installation. The straightedge

could be a straight piece of lumber or piece of flooring. This is temporary and will be replaced as the floor is completed.

## INSTALLATION INSTRUCTIONS

- A. Insert spacers at walls to maintain the expansion space between the flooring and the wall.
- B. Before starting to glue planks, dry lay the first two rows of flooring.
- C. Working from right to left, install planks so that the groove faces the straight edge (starter board).
- D. When reaching the end of the first row, cut the plank as necessary to fit.
- E. On the first 4 rows stagger end joints a minimum of 16" and then 8" thereafter.
- F. Use the remainder of the plank from the first row to start the second row. If the piece is less than 8" long, cut a new plank in half and use that piece to start the second row.
- G. Lay the remainder of the planks in the second row. Make sure that the rows are straight and no gapping exists on the sides or ends.
- H. Once you have dry laid the first two rows, remove all the planks in order. You are ready to begin.
- I. Begin gluing the boards.
  - 1. Run a continuous bead of adhesive along the groove of the short side (width) and the plank's side groove (length).
  - 2. Proper alignment is critical. Misaligned starter rows can cause side and end gaps to appear in proceeding rows of flooring.
- J. Install first row of planks with groove facing the straight edge. Work from right to left. Complete the first row. Make sure there are no gaps between the boards.
  - 1. Use a tapping block if needed to close the boards together.
  - 2. Immediately wipe away any excessive adhesive with a clean, slightly dampened cloth.

**CAUTION:** Adhesive that is allowed to dry on the finish surface can be difficult to remove and may leave a haze.

- K. At the end wall use an end pry bar, if needed, to pull the ends of the planks tight.
- L. Continue to install the floor working left to right, repeating the process until the completion of the floor.
  - 1. Continue to use the spacers on all vertical surfaces to maintain the 1/2" expansion.

**DO NOT USE** laminate straps as they may damage the flooring.

- M. The last row will most likely require cutting to width, but it should be no less than 1 1/2" wide. To do this:
  - 1. Lay the plank face up on top of the last full row installed.
  - 2. Trace the wall contour on the last plank using a scrap piece of plank and a pencil.
  - 3. Install cut planks and pull into place with a pry bar.
  - 4. Install spacing wedges between planks and wall.
  - 5. Remove the straight edge (starter row) and install the last row using the pry bar.
- N. Allow floor to dry for a minimum of 12 hours before removing all spacing wedges and allowing foot traffic.
- O. Install trim and moldings the following day.

