



## Rigid Core Floating Luxury Vinyl Flooring Installation Instructions

Permsshield Luxury Vinyl Flooring (“PERMSHIELD”) requires all vinyl flooring supplied by PERMSHIELD to be installed according to our most current installation instructions to maintain full product warranty coverage. The most current installation documents and videos can be found online at [www.permshield.com](http://www.permshield.com). Instructions on replacing damaged plank as well as maintenance and warranty documentation are also available online. The best practice is to have the flooring installed by professional installation technicians. PERMSHIELD requires that the flooring be maintained according to our most current care and maintenance guidelines. Please contact [info@permshield.com](mailto:info@permshield.com) or 754-222-6982 for any additional questions not covered in this document.

### GENERAL INFORMATION

- The HVAC system should be operational and set between 65°F - 85°F (18.3°C - 29.4°C) during and after the installation period. Keep in mind a concrete floor can be up to 10° colder than the ambient temperature.
- PERMSHIELD Luxury Vinyl Flooring can be installed concrete that floors that are on, above, or below grade.
- PERMSHIELD requires a 6-mil polyethylene vapor barrier to be installed under our floating floors that are installed on concrete that is on or below grade. We do **not** require a vapor barrier on flooring installed on wood subfloors.
- PERMSHIELD Luxury Vinyl Flooring is intended for indoor use only and is warranted as a floor covering only.
- PERMSHIELD Luxury Vinyl Flooring should only be installed after all the other trades have finished and the jobsite has been cleared of any/all debris that could damage the finished installation.
- Install cabinets and/or permanent ‘islands’ prior to installing flooring. Do not install cabinets, islands, and such on top of floating flooring.
- Do not install luxury vinyl flooring in areas subject to frequent standing water or in high moisture areas. This flooring is waterproof from topical moisture when properly installed and secures the flooring on all four sides. However, excessive moisture in the subfloor could promote mold, mildew, and other moisture related issues by trapping moisture emissions under the flooring, which may contribute to an unhealthy indoor environment.
- PERMSHIELD Luxury Vinyl Flooring has an attached underlayment. A second underlayment is allowed under any currently sold luxury vinyl flooring with attached underlayment in a residential application. If installed over a second underlayment, the underlayment’s combined thickness cannot be greater than 3 mm in total. IIC (ASTM E492- 09) and STC (ASTM E90-09) lab testing on certain luxury vinyl flooring products tested with and without a second layer of underlayment, to date, does not indicate that a second underlayment will provide additional acoustic benefit.
- Cartons should be stored horizontally on a flat and level surface with the corners protected from damage. Do not store cartons on their sides.
- When ordering flooring, order 5% more footage than the measured space to receive flooring. Where numerous angles or obstacles exist, more than 10-15% overage may be necessary.
- It is recommended to keep a minimum of one carton for future repair, replacement or for testing purposes.

### COTTAGES AND THREE SEASONS ROOMS

These products can be installed in fully enclosed 3 season environments such as solariums, sunrooms, three season rooms, and seasonal cottages. Installation in 3 season environments should occur while HVAC is operational and set between 65°F - 85°F (18.3°C - 29.4°C). These Luxury Vinyl Flooring products can withstand ambient temperature variations from -20°F (-29°C) to 176°F (80°C) when not occupied. While the space is occupied, the ambient temperature must be maintained between 55°F (13°C) and 100°F (38°C).

Please see the Conditions and Exclusions section of the PERMSHIELD Luxury Vinyl Flooring Warranty.

### GENERAL SUBFLOOR PREPARATION

- The subfloor must be clean, dry, structurally sound, firm, and secure.
- High spots should be grounded. The subfloor must be flat within 3/16" per 10-foot radius (4.7 mm per 3 m). All construction seams, expansion joints, low areas, grout lines, etc. larger than 1/4" should be filled to level with the surrounding surface using a Portland cement-based patching compound to eliminate telegraphing of such irregularities.
- The subfloor should be free of dust, debris, paint, varnish, wax, grease, oils, curing agents, sealers, solvents, and other foreign matter. Any adhesive residue should be reduced to a thin well bonded residue.
- Do not install PERMSHIELD Luxury Vinyl Flooring over cushion-backed vinyl flooring, asphalt-based floors, carpet and/or carpet pad, self-adhering plank or tile, laminate, or other floating flooring, or structurally- damaged concrete.
- The final responsibility for determining if a subfloor is acceptable for installation of the Luxury Vinyl Flooring lies with the floor covering installer.
- Where additional height is required to match an existing floor, a rigid material such as plywood, OSB, etc., may be used under Permsshield Luxury Vinyl Flooring without affecting the performance or warranty. All pre-installation preparations such as floor flatness, dryness, etc. must be completed prior to installation. We do not recommend usage of underlayment such as 4mm or 6mm cork.

## WOODEN SUBFLOORS

- Do not install material over wood subfloors that lay directly on concrete or over dimensional lumber, or plywood used over concrete. Refer to ASTM F1482 for panel underlayment recommendations.
- Crawl spaces must have a minimum of 18" (46 cm) clearance from the ground to the underside of the joists. The crawl space should have perimeter venting equal to a minimum of 1.5% of the crawl space square footage. A vapor barrier of 6 mil (minimum) black polyethylene film is required to cover the entire crawl space. Film seams must overlap 6" (15 cm) and must be sealed with moisture resistant tape. Local regulations should be followed.
- **DO NOT** install over sleeper construction subfloors or wood subfloors applied directly over concrete.
- We do not require the use of a 6-mil poly vapor barrier on wood subfloors.
- Plywood, OSB, particleboard, chipboard, wafer board, etc. must be structurally sound and must be installed following their manufacturer's recommendations. Local building codes may only establish minimum requirements of the flooring system and may not provide adequate rigidity and support for proper installation and performance. It should have a smooth finish and be free from spring and deflection. If this requirement is not met or known, a minimum of 1/4" (6.35 mm) APA approved underlayment grade wood must be adhered to the existing subfloor.
- All fastener indentations and joints should be level and smooth. Use an appropriate patching compound, as necessary.
- We do not recommend installing our Luxury Vinyl Flooring over pressure treated or fire-retardant treated plywood. An additional layer of 1/4" APA approved plywood should be installed over these types of plywood.
- **Wood/Plywood Subfloors** must be tested for moisture content according to NWFA guidelines and the subfloor moisture content should not exceed 12%. Subfloors must meet local building code requirements (US: minimum 3/4" T&G plywood or 23/32" T&G OSB. They must be secure to the joists, free of squeaks, bounce between floors joists and protruding fasteners.

## CONCRETE SUBFLOORS (PORTLAND OR GYPSUM BASE)

- New concrete slabs must be dry and completely cured prior to installation of flooring.
- Luxury Vinyl Flooring floors require that all concrete subfloors be tested for moisture. The moisture vapor emission rate should not exceed 8 lbs. /1000 sq. ft. per ASTM F1869, and the internal relative humidity should not exceed 90% per ASTM F2170. Records of the testing locations and results should be documented.
- The pH level should be between 5 and 9.
- Concrete should meet the guidelines of ASTM F 710 "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring" (see [www.astm.org/standards/F710](http://www.astm.org/standards/F710)).
- PERMSHIELD requires a 6-mil polyethylene vapor barrier to be installed under our floating floors that are installed on concrete that is on or below grade. Joints should be overlapped a minimum of 4" and taped with clear tape. Allow the poly to run up the wall 2-3 inches and trim after the flooring has been installed.
- All recommendations and guarantees as to the suitability and performance of lightweight concrete under resilient flooring are the responsibility of the lightweight concrete manufacturer. The installer of the lightweight concrete product may be required to be authorized or certified by the manufacturer. Correct on-site mixing ratios and properly functioning pumping equipment are critical. Slump testing is recommended.
- Lightweight aggregate concretes having dry densities greater than 90 lbs. per cubic foot may be acceptable under resilient flooring.
- Concrete slabs with heavy static and/or dynamic loads should be designed with higher strengths and densities to support such loads.
- Perform bond testing to determine compatibility of adhesive to the substrate. A primer must be used to promote adhesion.

## EXISTING FLOOR COVERINGS

PERMSHIELD Luxury Vinyl Flooring can be installed over most existing hard surface flooring if it is clean, dry, flat, structurally sound, and free from deflection.

- This product can be installed over existing ceramic/porcelain tile products with up to a 1/4" wide grout joint. If the grout joint width exceeds 1/4", a Portland based cementitious patching compound should be used to fill the grout joint to make it smooth with the surface of the tile.
- Properly cleanse any existing marble/terrazzo flooring using a commercial degreasing/dewaxing solution. Rinse thoroughly then dries thoroughly. Grind or abrade any highly polished or irregular surfaces.
- Do not install over hardwood/engineered hardwood installed on concrete.

## RADIANT-HEATED FLOORS

It is the homeowner's responsibility to determine if the radiant heat system being considered is compatible for use under the floor being installed. We recommend that the homeowner contact the system manufacturer and get written confirmation that the system is approved for use with SPC flooring and under what operating conditions. PERMSHIELD Luxury Vinyl Flooring can be installed over embedded radiant-heated floors provided the operating temperature never exceeds 82° F (28° C). The heating components must have a minimum of 1/2" separation from the flooring product. The radiant system should be in operation for three weeks prior to installation of the flooring to reduce any residual moisture in the subfloor. For 48 hours prior

to and during installation, the system should be kept at 65 °F (18.3° C). Once the installation is completed, the heat should be gradually increased in 5° (2.8°) increments per day until the desired setting is reached to avoid “shocking” the floor. PERMSHIELD does not recommend or approve of installation over wire induction mat heat systems. Where floor heat is present, be mindful that loose rugs or carpets may function as heat insulators and raise the temperature above the tolerated maximum surface temperature of 82° F (28° C). Use of an in-floor temperature sensor is recommended to avoid overheating.

### RECOMMENDED TOOLS AND MATERIALS

Measuring tape, framing/speed square, broom, utility knife, straight edge, spacers, chalk line, embossing leveler/floor patch (if necessary), rubber mallet, tile cutter (optional), table saw, jigsaw.

### INSTALLATION – GENERAL

- Areas up to 2500 sq. ft. require a minimum of 1/4" (6.35 mm) expansion space around the perimeter of the room and all permanent vertical obstructions. Areas larger than 2500 sq. ft. require 1/2" (12.7 mm) expansion. Make certain that doors, moldings, etc. allow sufficient clearance above the flooring.
- It is recommended that the flooring be installed running parallel to the longest wall and into the light source when possible.
- When installing, work from several boxes at a time for best results and overall appearance.
- Inspect all flooring. Confirm the product to be installed is the correct style and color. Do not install flooring that is not the correct style and color or that is from multiple production runs. Do not install damaged or defective flooring. PERMSHIELD will not be liable where incorrect flooring, damaged flooring, or flooring with visible defects is installed.
- Avoid exposure to direct sunlight for prolonged periods as such exposure may result in discoloration. Excessive temperatures can cause the flooring to expand and lift away from the subfloor. During peak sunlight hours, the use of drapes or blinds is required.
- Remove existing floor moldings (where applicable) and undercut doorway moldings to the thickness of the subfloor.
- PERMSHIELD Luxury Vinyl Flooring should never be nailed to the substrate.
- Planks/tiles can be cut using a sharp utility knife and a square. Score the surface of the plank/tile with the knife and snap the plank/tile at the score line. A tile cutter or powered saw can also be used.
- All installations that will be subject to rolling casters, moveable racks, wheeled displays, power, or manual wheelchairs, etc. must be glued to the substrate.
- Heavy loads can pin the floating product to the substrate which may prevent the product from expanding and contracting evenly, causing side or end separation, peaking, or gapping. Where heavy objects such as safes will be present, glue the flooring to the substrate.
- Where rigid core Luxury Vinyl Flooring will be adhered to the floor due to rolling loads or heavy objects, use one of our recommended adhesives and follow the spread rate and other instructions on the adhesive container.
- If the new floor will be adhered, please reference the Direct Glue Luxury Vinyl Flooring installation instructions.

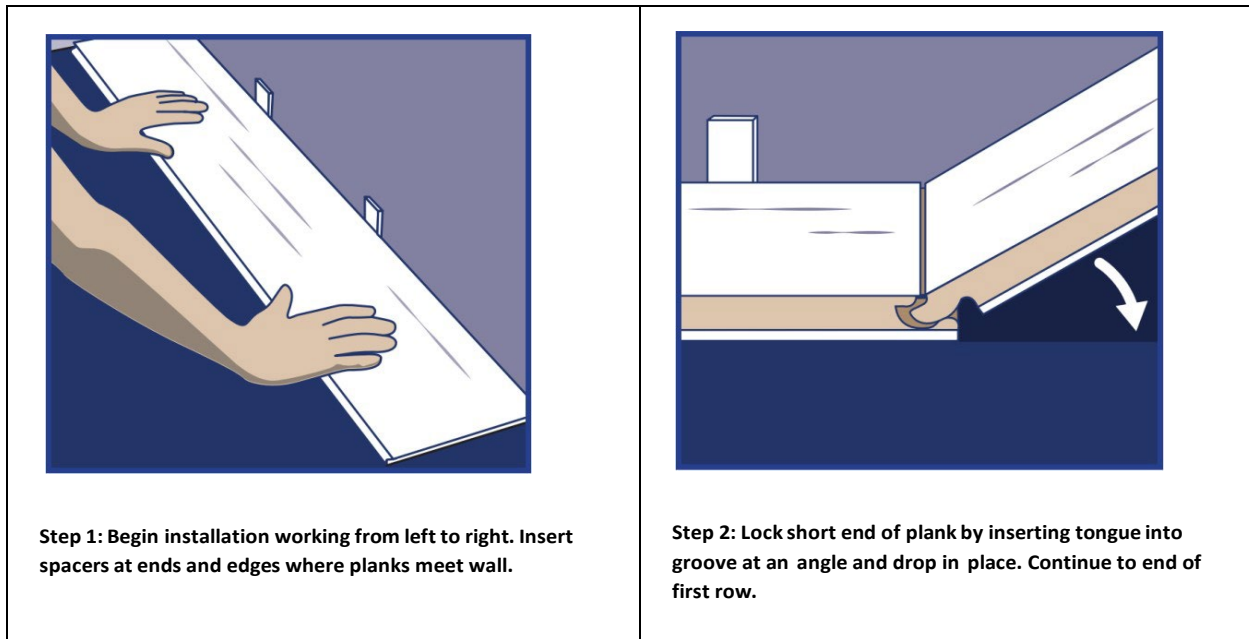
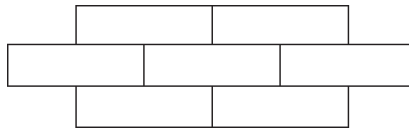
### INSTALLATION – PROCEDURE

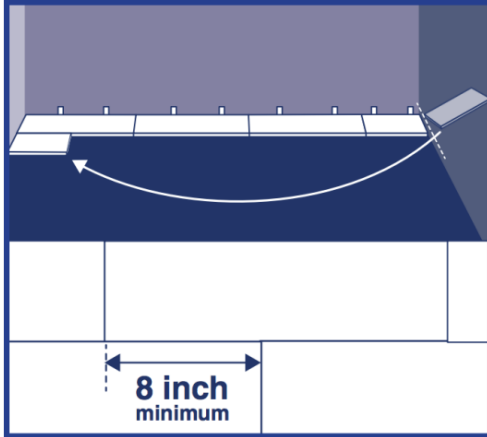
- Installation of 6 mil Poly Film Underlayment is recommended for floating method only in high moisture applications.
- For use over concrete substrates - seams MUST be taped. Optional over wood substrates – do NOT tape seams.
- Begin at the starting wall. Roll the underlayment out parallel to the starting wall and allow the poly film to run 2 inches up the wall. After the flooring has been installed trim back the poly film from the wall.
- Roll the next course of poly film parallel to the first run and overlap a minimum of 4 inches. Smooth out any wrinkles or creases in the poly film. Use clear tape to tape the seams together when installed over concrete substrates.
- Continue to install the flooring over top of the poly film taking care not to damage the poly film.
- **Note:** Do not cover the entire area of the substrate to prevent damage or present a slip hazard. Roll the poly film out one row at a time.
- **Floating Installation:** SPC plank flooring is designed to be installed utilizing the floating method. Proper expansion space 1/4" (6.35 mm) is required. Undercut all door jams. Do not fasten wall moldings and or transition strips to the planks.
- **Glue Down Installation:** SPC products are approved for glue down installation over approved wood and concrete substrates. Follow adhesive label application instructions. Install flooring into wet adhesive to achieve a permanent bond. Maintain 1/4" (6.35 mm) perimeter expansion space. Refer to adhesive label for moisture limits of the adhesive. Roll flooring immediately after installation with a 100 lbs. 3-section roller
- Recommended Adhesive(s): Shaw 200, 1500, 4100 (or equivalent/comparable adhesive). If alternative adhesives are used, a bond test should be performed to ensure compatibility. Carefully measure the room to determine the width of the last row of flooring. If the width is less than 2" (50 mm) excluding the tongue, the width of the first row will have to be cut to increase the last row to more than 2". Begin laying flooring from the left side (the starting wall) and work to the right side. The tongue of the plank should face the starting wall. Make certain that the first row (tongue side) is perfectly straight to ensure subsequent rows properly align. Inspect the groove area and remove any debris that may prevent proper assembly of planks/tiles. For best results, a full piece of plank can be used as a bridge to align the end joints in the first few rows. The end joints of the planks in the first row are assembled by locking short end of plank by inserting tongue into groove at an angle and drop in place downward until the end of the plank snaps in place of the previous planks ensuring that the planks are perfectly aligned. The planks should be flush and even. Assemble the end joints in the first 2-3 rows 6-8" away from the wall without installing the

last pieces in each row.

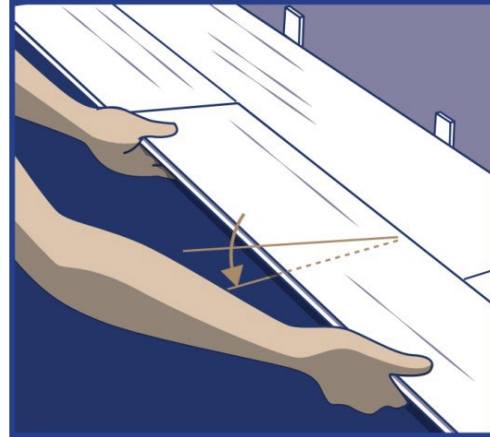
1. The last piece in the first row will need to be cut. Measure the distance between the wall and the surface of the last full piece. Subtract the required expansion space from this measurement to allow for the spacer. If this measurement is less than 8" (20 cm), the first plank/tile in the row should be cut. The first and last plank/tile in each row should be at least 8" (20 cm) in length. Install the remaining full planks in the first rows.
2. Install the long side of the first plank/tile of the second row. Insert the tongue side into the groove side of the plank/tile from the previous row at a low angle and lower flat to the substrate.
3. Install the second plank/tile of the second row. Position the long side of the plank/tile with the tongue side, fully engage into the receiver of the first row of product. Lower the plank/tile with firm pressure to the floor, ensuring that the end joint is overlapping and perfectly aligned. Using a rubber mallet start from the outside edge and tap the end joint downward and work your way back to the main joint until the end of the plank snaps in place. Continue installing planks/tiles in the second row. It is important to make sure that the first 2-3 rows are straight and square as they can affect the entire installation.
4. After the first 2-3 rows have been assembled the installer can insert the spacers and slide the rows in place. Place spacers between the short and long side of the planks/tiles and the wall. Always position one spacer between the wall and where the flooring pieces join.
5. Continue working from left to right, row by row. Be sure to maintain the expansion space around all walls and vertical objects. To maintain a random appearance, remember to offset end joints a minimum of 8" (20 cm).
6. To disengage the end joints, slide the planks/tiles apart horizontally.
7. If the panels can't be angled to engage the long joints (e.g., under a door jamb or low fitted radiator) the installer will need to shave the raised portion of the receiving edge off the lip of the installed piece by using a chisel or a small block plane. Dry fit the piece to make sure it fits. Run a bead of tongue and groove adhesive on the modified groove of the installed piece. Install the piece and use a few pieces of painter's tape to hold the plank in place until the adhesive has dried and cured.

**Tile patterns must be installed in a staggered (offset) brick pattern. Minimum 1/3 offset 1/2 offset is preferred.**

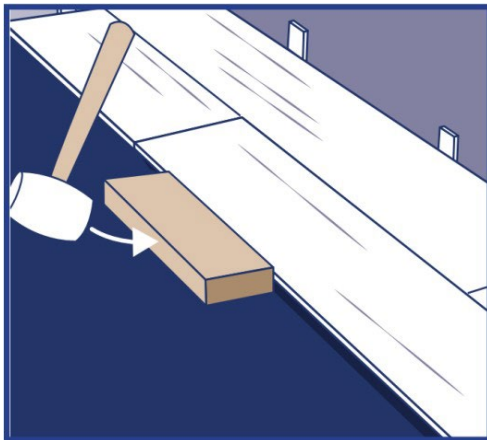




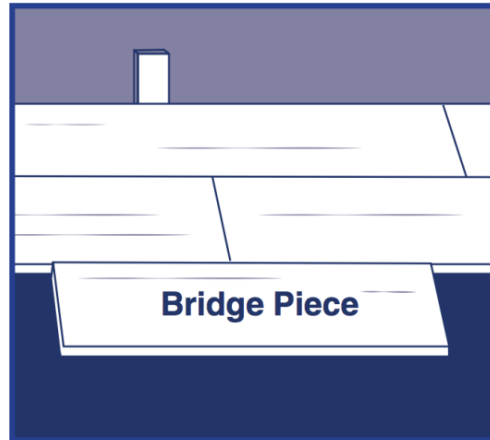
**Step 3:** Use leftover plank from first row as starter for second row. There must be at least 20cm between plank end joints on adjacent rows. **FOR TILE INSTALLATIONS:** The distance between end joints should be equal to 30cm for proper appearance.



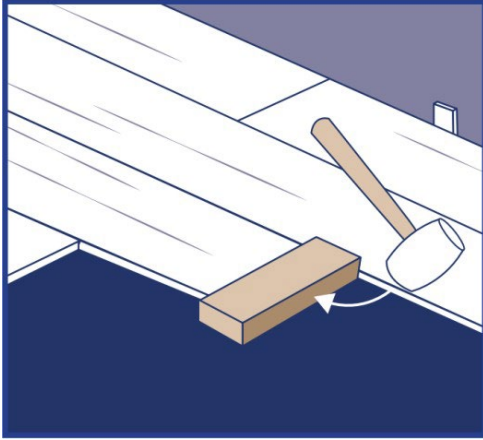
**Step 4:** Lock the long edge of plank by inserting tongue into groove at an angle and drop in place. Slide plank toward end of previously installed plank until the tongue just touches the groove.



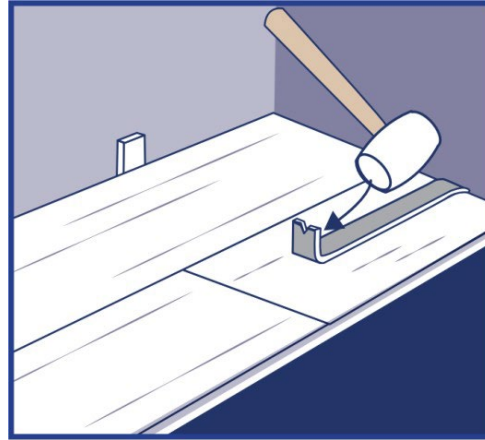
**Step 5: IMPORTANT!** Use a hammer and tapping block to tap the long edge of plank to ensure a tight fit. **ANY GAPPING CAN COMPROMISE THE LOCKING SYSTEM!**



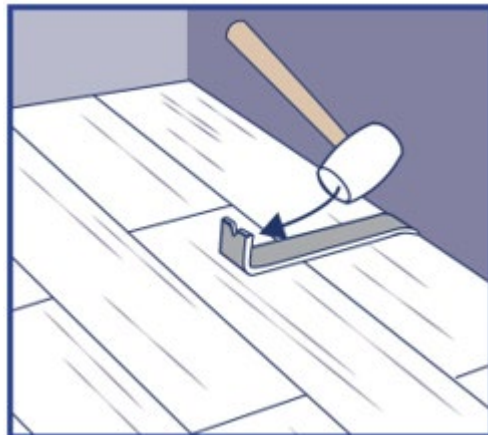
**Step 6:** Attach a scrap piece of floor to bridge the gap between ends of planks.



**Step 7: Tap end of plank with hammer and tapping block to lock ends of planks together. Remove bridge and continue towards wall until installing the final plank in the row. BE SURE TO TAP ON EDGE OF VINYL SO AS NOT TO DAMAGE LOCKING PROFILE.**

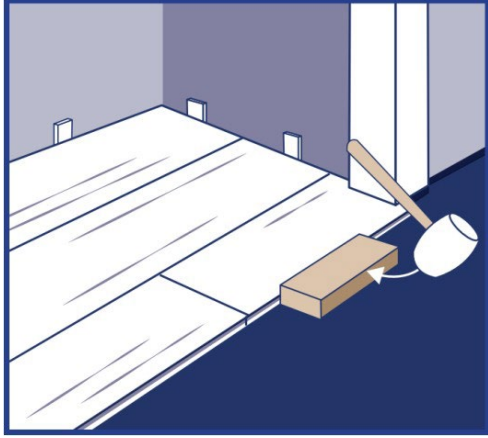


**Step 8: Use hammer and pull bar to lock the final piece in row. Insert spacer at end of row. Continue installation to final row.**

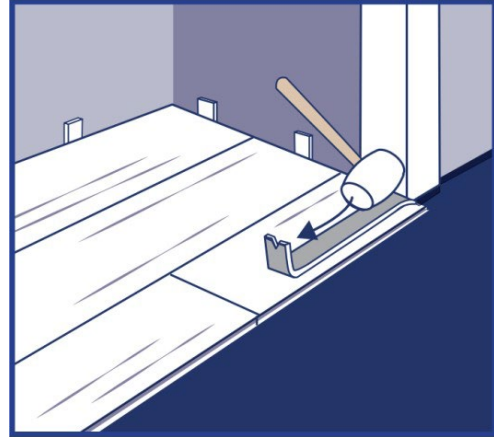


**Step 9: Use hammer and pull bar to lock long edges of planks on final row.**

**Installing underneath door jambs:**



**Step 1: Undercut space under door jamb to allow plank to slide freely. Tap long edge with hammer and tapping block to lock long edge.**



**Step 2: Use hammer and pull bar to lock short end of plank.**

**FINISHING THE INSTALLATION**

- After all planks/tiles have been installed, remove spacers from perimeter of room.
- Installers can cover the gap between the bottom of the door jamb and flooring with a **flexible silicone caulk**.
- Install quarter-round or baseboard molding. The molding should be of sufficient size to cover the expansion space and should be fastened to the wall, not to the flooring. Do not fasten any moldings through the flooring.
- Installations in wet areas such as bathrooms should be caulked around the perimeter and around the toilet flange using a silicone caulk that remains flexible when dry to retard moisture from getting under the flooring.
- Protect the flooring from subsequent projects using a non-adhering temporary protective material such as Ram Board®.
- Consult the PERMSHIELD Luxury Vinyl Flooring Care and Maintenance document for complete cleaning and care instructions.