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# SHAW MATRIX with Advanced Flex Technology Instruction Manual

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## MATRIX WITH ADVANCE FLEX TECHNOLOGY

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## INSTALLATION INSTRUCTIONS

This is an interactive PDF, click on the rectangular buttons or blue text to jump to the sections.  
Easy-to-follow instructions for the handy DIYer.

### SIMPLE

Start to finish, everything you need to know to install your Matrix floor like a professional.

### TECHNICAL

## INSTALLATION 101

### THE PREP

1. Store and install Matrix flooring in a climate-controlled location with a temperature range between 55°–85°F (13°–29°C).  
If the product is stored in temperatures outside this range, acclimate the product for 48 hours prior to installation
2. Inspect Subfloor (See Step 1)
3. Inspect planks for damage before installing.
4. To minimize shade variation, mix and install planks from several cartons.



Tape Measure



Pencil



Rubber Mallet



Utility Knife



1/4" Spacers



Tapping Block



Pull Bar



T-Square

### THE TOOLS

Do not sand, dry sweep, dry scrape, drill, saw, bead blast, or mechanically chip or pulverize existing resilient flooring, backing, lining felt, asphaltic “cutback” adhesives or other adhesives. Avoid creating dust. Inhalation of such dust is cancer and respiratory tract hazard.

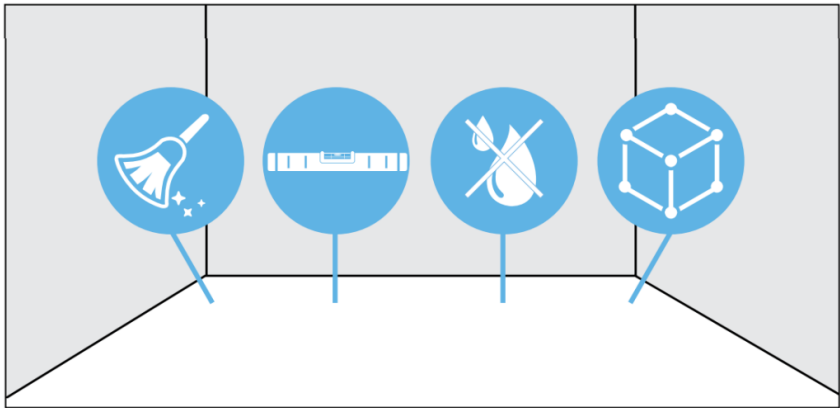
### THE PATTERN



Random Appearance with a Minimum 8" Offset

**THE STEPS**

Make sure your subfloor is: clean, flat, dry, and structurally sound. Wood Subfloor | Concrete Subfloor

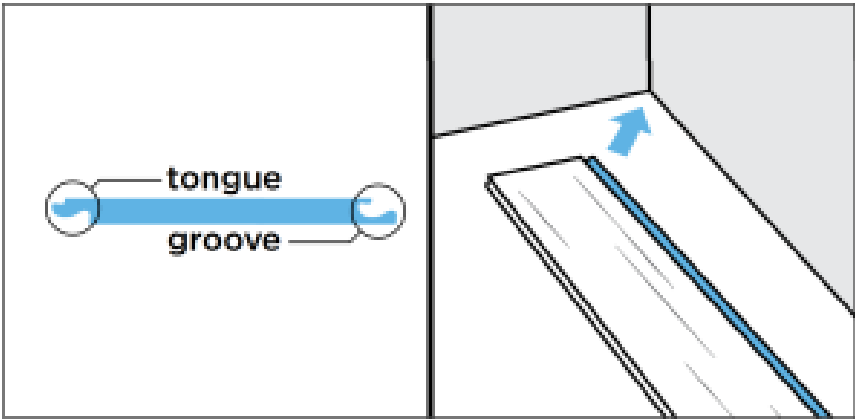


Choose your starting wall

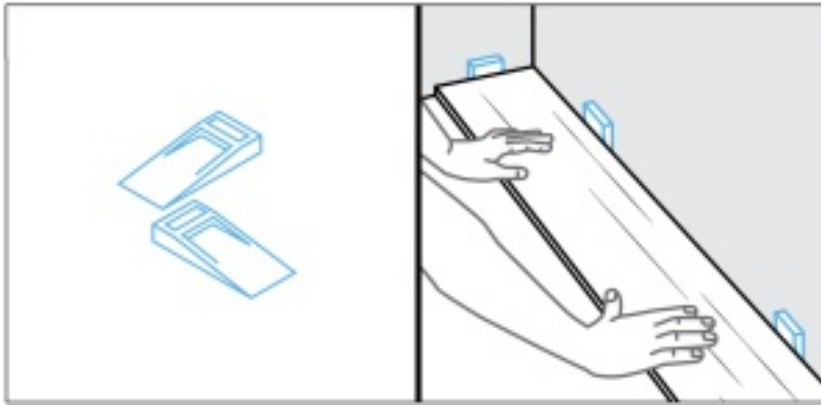


MORE MATRIX® QUESTIONS? Call 1-800-355-7429

and select option 2 twice (Se Habla español)  
Place tongue side in the starting corner (work from left-right).

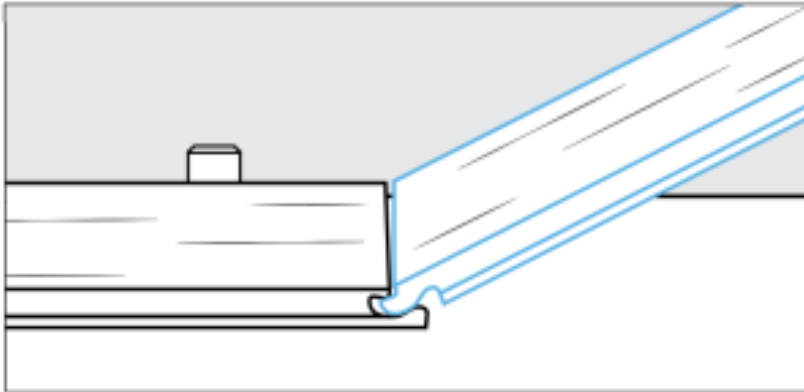


Use several spacers to maintain a 1/4" expansion



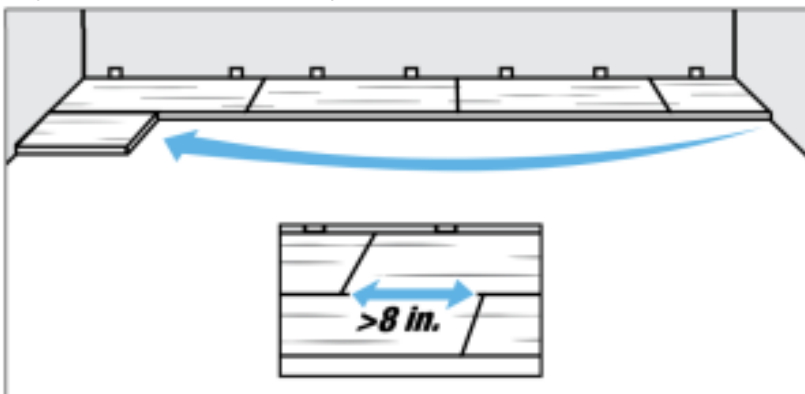
gap along the walls.

Lock the short ends together to complete your first row. Cut the planks as needed to fit the space.



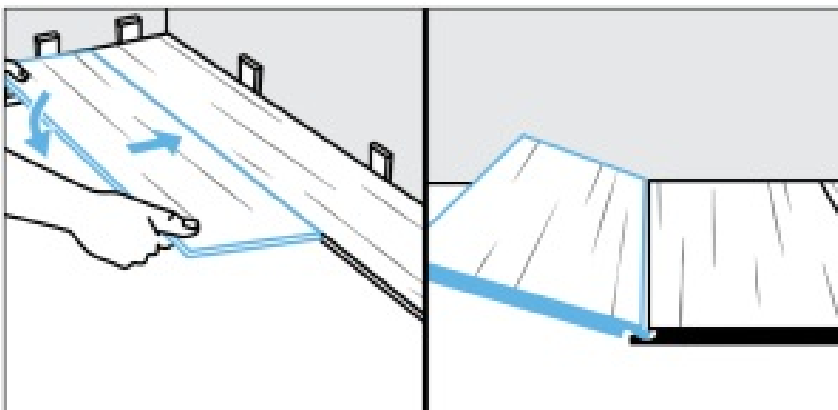
long (20cm) or start with a new plank.

Start your second row. With a cut-off that is more than 8"

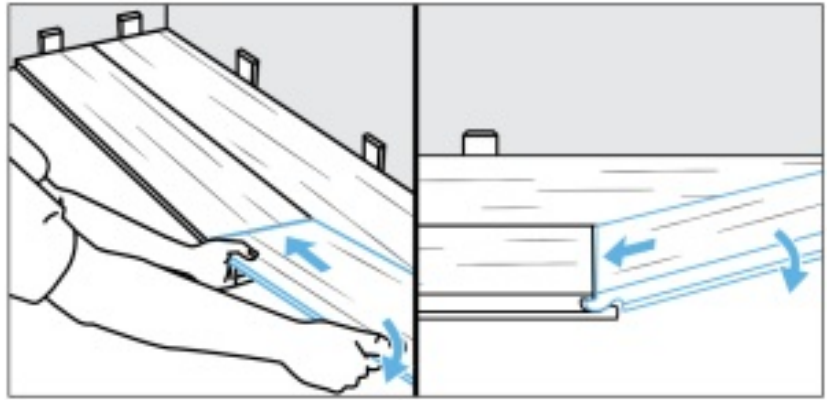


the first row at a low angle and rotate down.

Insert the long side tongue into the groove of the plank in

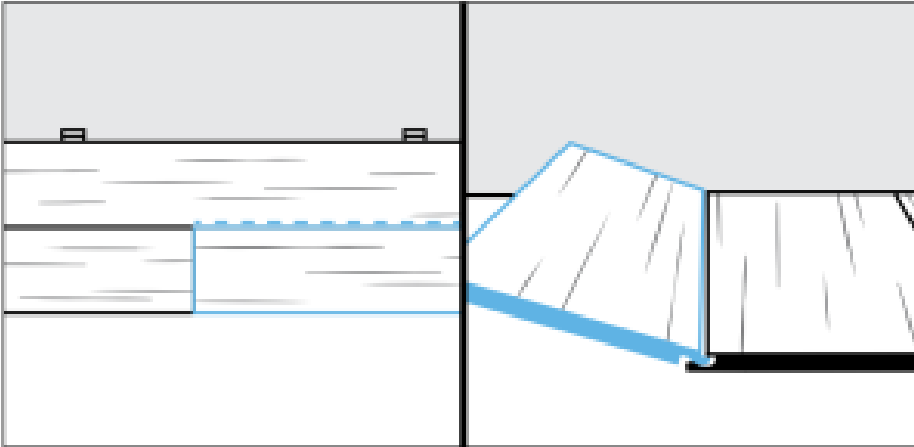


Second plank, second row: Insert the short end

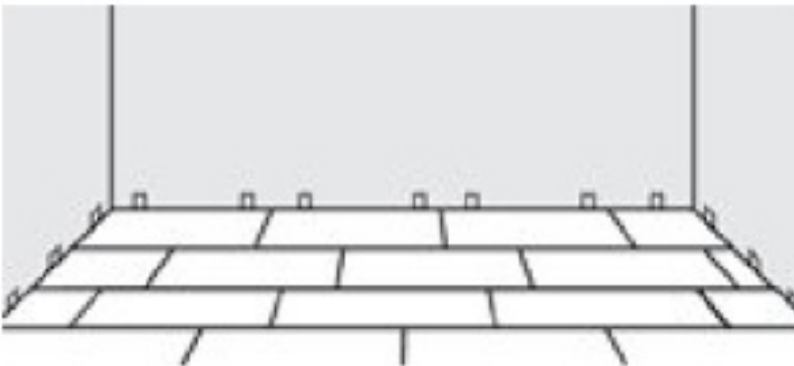


tongue into the previously installed plank groove.

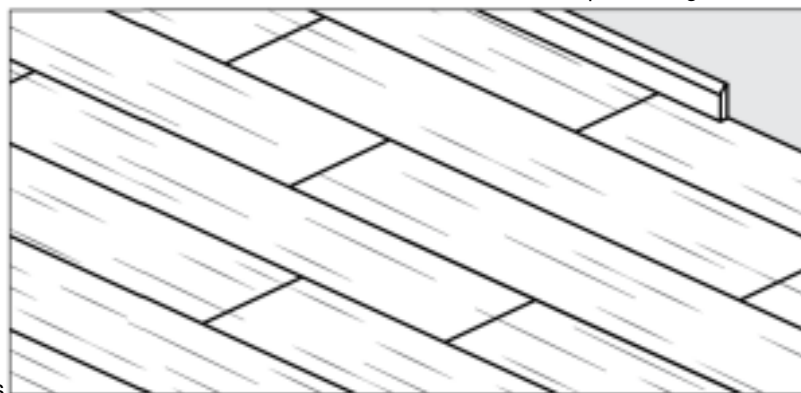
Align the plank so that the long side tongue tip is positioned just over the groove lip of the plank in the first row. Working from the end seam, at a low angle, insert the long tongue into the groove of the adjoining plank.



Continue installing planks and check that all planks are fully engaged. If slight gapping is found, fix it with a tapping block and a scrap of flooring (use the scrap to protect the floor from the tapping block).

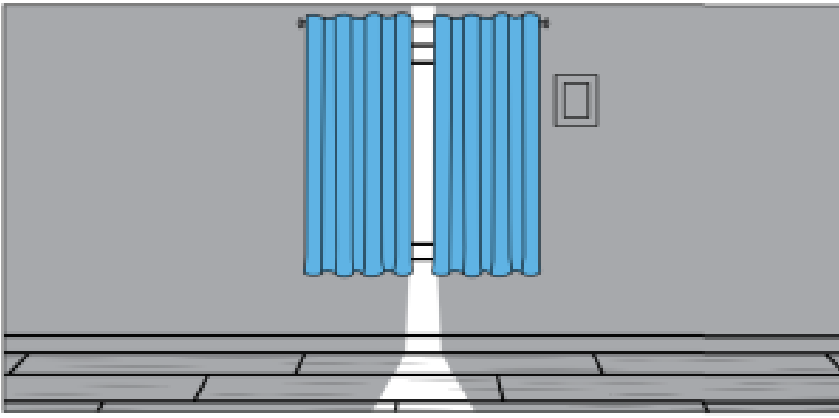


Protect all exposed edges of the flooring by installing

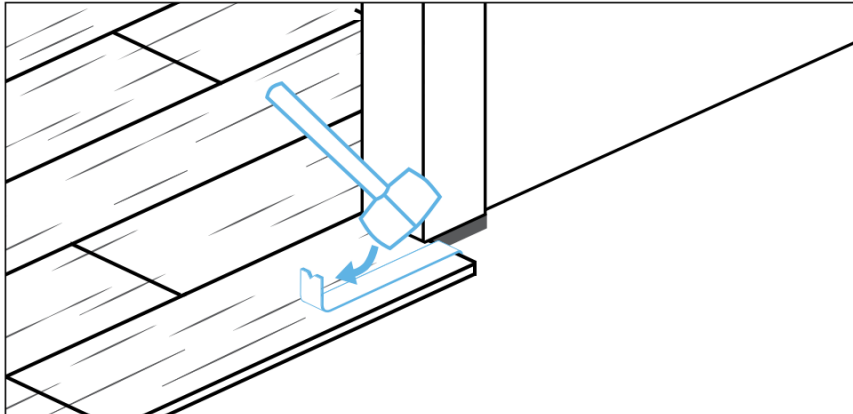


wall molding and/or transition strips

Protect the finished flooring from exposure to direct sunlight to reduce fading and thermal expansion.



For door jambs, a flat pull bar may be used to assist in locking the planks. For irregular spaces, cut planks cleanly with a utility knife. You can use a cardboard template of the area to transfer the pattern to the plank.



Enjoy your new floor!

## RESILIENT INSTALLATION GUIDELINES FOR HYBRID LVT PRODUCTS

### GENERAL INFORMATION

All instructions and recommendations should be followed for a satisfactory installation.

- Acclimation of material prior to installation is not required; however, the floor covering should be installed in a climate-controlled environment with an ambient temperature range between 55°F – 85°F (13°C-29°C) or average temperature of 70°F (21.1°C).
- For installations involving 3 season scenarios, meaning, the dwelling or installed space is without climate control for extended periods during certain seasons of the year, the post-installation temperature range allowed is an ambient room temperature between -25°F and 155°F (31.6°- 68.3°C). This allowance is for floating floors only and does not apply to glue-down installations.
- Avoid exposure to direct sunlight for prolonged periods, doing so may result in discoloration. During peak sunlight hours, the use of drapes or blinds is recommended.
- Excess temperature due to direct sunlight can result in thermal expansion and UV fading.
- Install product after all other trades have completed work that could damage the flooring.
- If cabinets are to be installed on top of the flooring (including islands), that area of material must have fully adhered to the subfloor (including an additional 2 ft. beyond the cabinets and islands).
- To minimize shade variation, mix and install flooring from several cartons.
- Inspect all flooring for damage before installing. If you have any concerns about the product fit or finish, call Shaw Information Services at 1-800-441-7429. Claims will not be accepted for flooring that has been cut to size and/or installed.
- Use cementitious patching and leveling compounds that meet or exceed maximum moisture level and pH requirements. Use of gypsum-based patching and/or leveling compounds that contain Portland or high alumina cement and meet or exceed the

compressive strength of 3,000 psi is acceptable.

- Installation Methods: Floating (on, above or below grade) / Glue Down (on, above or below grade) Required perimeter expansion spacing for Floating or Glue Down installation is as follows:
- For areas less than 2500 sq/ft. use 1/4" gap
- For areas larger than 2500 sq/ft. use 1/2" gap.
- This flooring is waterproof and reliably secures the flooring panels on all four sides. However, excessive moisture in the subfloor could promote mold, mildew, and other moisture-related issues like the trapping of moisture emissions under the flooring, which may contribute to an unhealthy indoor environment.
- The additional layer of 6-mil poly film or equal vapor retarder with a perm rating of 1 or less may be used as an additional layer of protection.

## **II. SUBFLOOR INFORMATION**

All subfloors must be clean, flat, dry, and structurally sound. The correct preparation of the subfloor is a major part of a successful installation. Subfloor must be flat; 3/16" in 10' or 1/8" in 6'.

### **A. WOOD 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.

1. Do not apply sheet plastic over wood subfloors.
2. Basements and crawl spaces must be dry. The use of 6 mils black polyethylene is required to cover 100% of the crawl space of the earth. Crawl space clearance from ground to underside of the joist is to be no less than 18" and perimeter vent spacing should be equal to 1.5% of the total square footage of the crawl space area to provide cross ventilation. Where necessary, local regulations prevail.
3. DO NOT install over sleeper construction subfloors or wood subfloors applied directly over concrete.
4. All other 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. If needed add an additional layer of APA-rated underlayment, fasten and secure according to the underlayment manufacturer's recommendations.
5. Resilient flooring is not recommended directly over fire-retardant-treated plywood or preservative-treated plywood. An additional layer of APA rated 1/4" thick underlayment should be installed.

### **B. CONCRETE SUBFLOORS**

**NEW AND EXISTING CONCRETE SUBFLOORS SHOULD MEET THE GUIDELINES OF THE LATEST EDITION OF ACI 302 AND ASTM F 710, "STANDARD PRACTICE FOR PREPARING CONCRETE FLOORS TO RECEIVE RESILIENT FLOORING" AVAILABLE FROM THE AMERICAN SOCIETY FOR TESTING AND MATERIALS, 100 BARR HARBOR DRIVE, WEST CONSHOHOCKEN, PA 19428; 610-832-9585; HTTP://WWW.ASTM.ORG.**

1. Floors shall be smooth, permanently dry, clean, and free all foreign material such as dust, wax, solvents, paint, grease, oils, and old adhesive residue. The surface must be hard and dense, and free from powder or flaking.
2. Concrete slabs must be dry with no visible moisture.
3. Required Moisture Testing – maximum moisture level per ASTM 1869 CaCl is 8 lbs. and ASTM 2170 In-situ Relative Humidity 90% per 1000 sq. ft. in 24 hours.
4. Do not install over concrete with a history of high moisture or hydrostatic conditions. Excessive moisture in the subfloor could promote mold, mildew, and other moisture-related issues like the trapping of moisture emissions under the flooring, which may contribute to an unhealthy indoor environment. Shaw Industries does not warrant nor is responsible for damage to floor covering due to moisture-related issues.
5. The pH level of concrete should be between 7-10.
6. The final responsibility for determining if the concrete is dry enough for installation of the flooring lies with the floor covering installer.

**NOTE: IT MAY NOT BE THE FLOOR COVERING INSTALLER'S RESPONSIBILITY TO CONDUCT THESE TESTS. IT IS, HOWEVER, THE FLOOR COVERING INSTALLER'S RESPONSIBILITY TO MAKE SURE THESE TESTS HAVE BEEN CONDUCTED, AND THAT THE RESULTS ARE ACCEPTABLE PRIOR TO INSTALLING THE FLOOR COVERING. WHEN MOISTURE TESTS ARE CONDUCTED, IT INDICATES THE CONDITIONS ONLY AT THE TIME OF THE TEST.**

### **LIGHTWEIGHT CONCRETE**

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 product may be required to be authorized or certified by the manufacturer. Correct on-site mixing ratios and properly functioning pumping equipment are critical. To ensure proper mixture, 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.
- The surface must be permanently dry, clean, smooth, free of all dust, and structurally sound.
- Perform Bond testing to determine the compatibility of adhesive to the substrate. Shaw 9050 primer (or equivalent /comparable primer) can be utilized to promote adhesion.
- Three internal relative humidity tests should be conducted for areas up to 1000 SF. One additional test, for each additional 1000 SF.

**Radiant Heat:** Radiant-heated subfloor systems can be concrete, wood or a combination of both. The heating systems components must have a minimum of 1/2" separation from the flooring product. The system must be on and operational for at least 2 weeks prior to installation to reduce residual moisture. Three days prior to installation lower the temperature to 65°F, after installation gradually increase the temperature in increments of 5°F to avoid overheating. Maximum operating temperature should never exceed 85°F. Use of an in-floor temperature sensor is recommended to avoid overheating. Contact the manufacturer of your radiant heating system for further recommendations.

**Electric Radiant Floors:** consist of electric cables (or) mats of electrically conductive materials mounted on the subfloor below the floor covering. Mesh systems are typically embedded in thin-set. When embedding the system components, use cementitious patching and leveling compounds that meet or exceed Shaw's maximum moisture level and pH requirements. Use of gypsum-based patching and/or leveling compounds that contain Portland or high alumina cement and meet or exceed the compressive strength of 3,000 psi is acceptable. **Hydronic Radiant Floors:** pump heated water from a boiler through tubing laid in a pattern under the flooring. Typically installed in channels under a wooden subfloor (or) embedded in concrete slabs. Requires the installer to follow a specific nailing pattern to avoid penetration of the heating system.

### C. EXISTING FLOOR COVERINGS

Flooring can be installed over most existing hard-surface floor coverings, provided that the existing floor surface is fully adhered, clean, flat, dry, structurally sound and free of deflection.

- Existing sheet vinyl floors should not be heavily cushioned and not exceed more than one layer in thickness. Soft underlayment and soft substrates will compromise the product's locking ability as well as diminish its indentation resistance.
- Installation is NOT allowed over any type of carpet.
- Do NOT install over wood floors adhered to concrete.
- Never use solvents or citrus adhesive removers to remove old adhesive residue. Solvent residue left in and on the subfloor may affect the new floor covering.

## INSTALLATION

**Tools:** Tape Measure, Utility Knife, Jigsaw, Tapping Block or Rubber Mallet, Pull Bar, 1/4" Spacers, T-Square, Safety Glasses, Broom or Vacuum and, if necessary, tools for subfloor repair.



To cut the flooring, simply measure and mark the flooring. Then, use at-square and utility knife to TIP score and snap. You will also need to back-cut the underpad (if applicable) on the bottom of the IF flooring. If you have difficulty using this method, you can use a jigsaw, circular saw or miter saw.

**Floating Installation:** Hybrid LVT flooring is designed to be installed utilizing the floating method. Proper expansion space 1/4" (6.35 mm) is required. Undercut all doorjamb. Do not fasten well molfrigs and or transition steps to the flcortig.

**Glue Down Installation:** Hybrid LVT products are approved for glue-down installation over approved wood and concrete substrates. Polow adhesive label al: vacation 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 titration with 100 Cs. 3-section roller.

- Recommended Adhesive(s): Shaw 200 (or equivalent/comparable) adhesive. If alternative adhesives are used, a bond test should be performed to ensure ccmpattity.

**Flooring must be Installed In a staggered (offset) pattern.**



**Remember to stagger end joints from row to row- 8+'' for planks and 12+'' for tiles.**

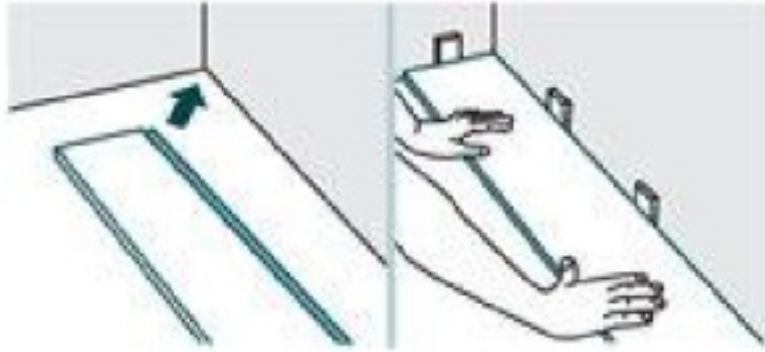
**Planks:** Use the cut-off end from the previous row to begin the next row. If the cut-off end is less than 8'', cut a new plank to be 8'' or more to start the next row.

**Tiles:** Always begin a row with either a full tile or a half tile so the joints are consistently staggered in a "brickwork" type pattern.



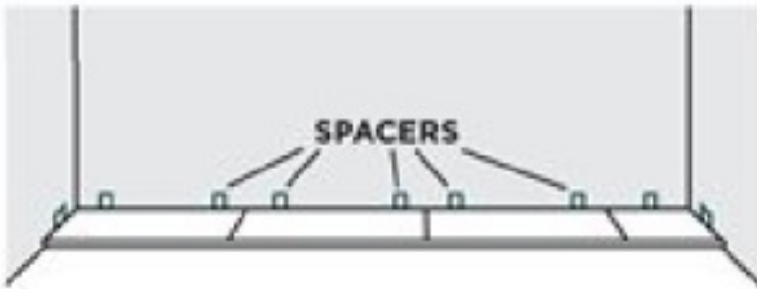
<p>1. Gather your tools</p>	<p>2. Make sure your space is: clean, flat, dry and structurally sound.</p>	<p>3. Measure your space</p>
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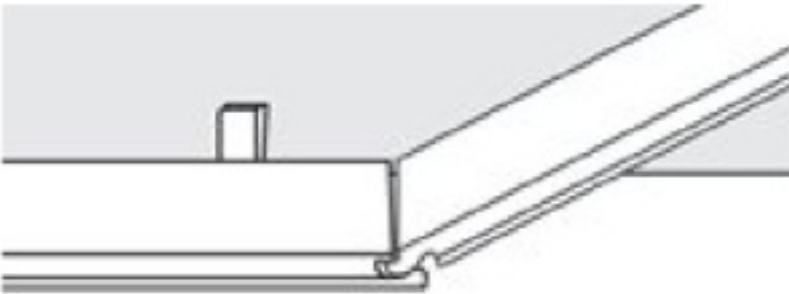


4. Choose your starting wall

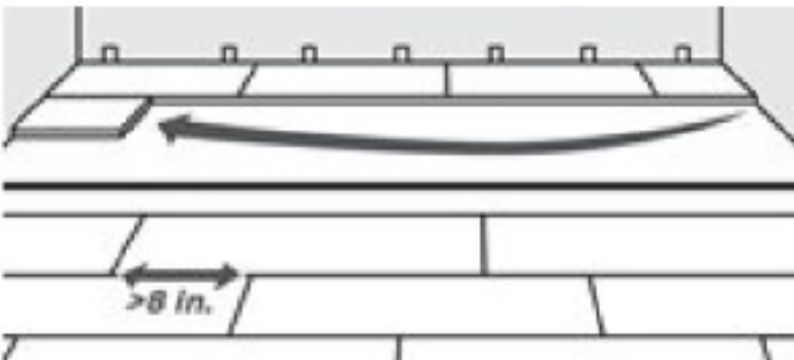
5. Place tongue side in the starting corner (work from left to right).



6. Use several spacers to maintain a 1/4" expansion gap along the walls.

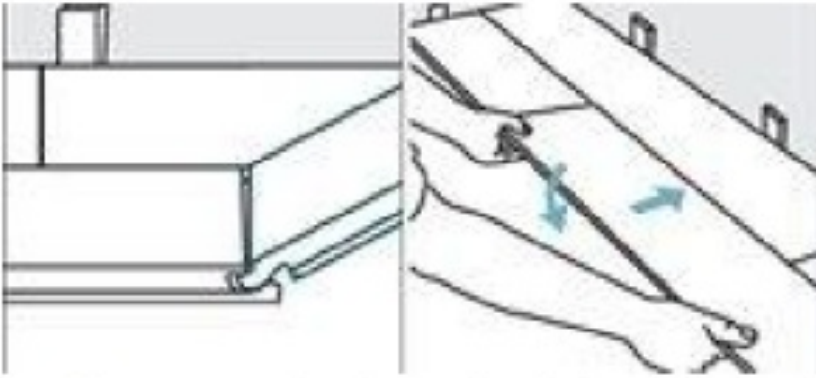


7. Lock the short ends together to complete your first row. Cut the planks as needed to fit the space.

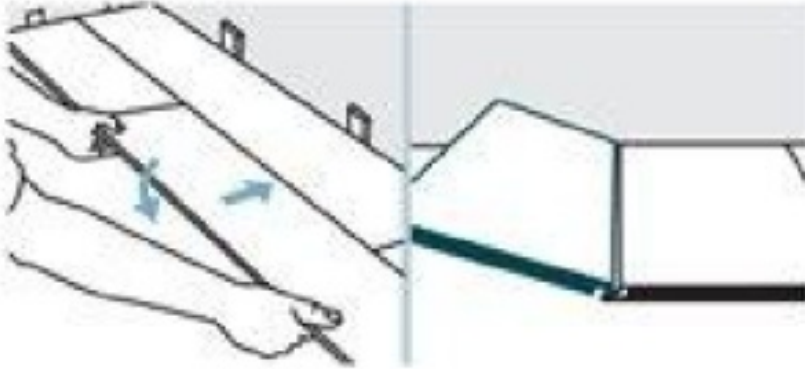


8. Start your second row. With a cut-off that is more than 8" long or start with a new plank.

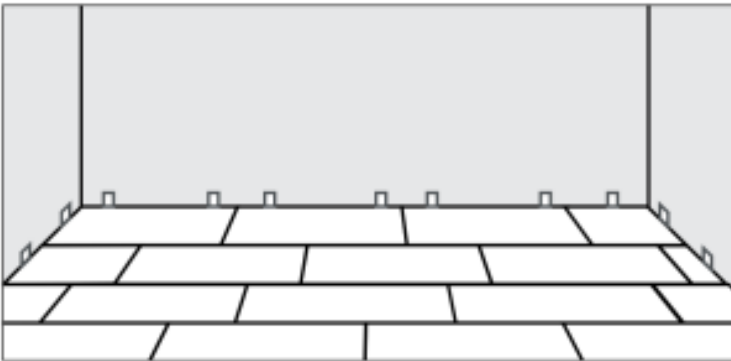




9. Connect the long side at a slight angle, engage the long side and rotate down.



10. Continue installing the row



11. Repeat steps to finish room



12. Enjoy your new floor!

1. Before you start with the installation, it is important to determine the layout of the flooring. Proper planning and layout will prevent having narrow plank widths at wall junctures or very short-length pieces at the end of rows.
2. Determine if the starter row will need to be cut. If the first row of planks does not need to be trimmed in width, it will be necessary to cut off the unsupported tongue so that a clean, solid edge shows towards the wall.
3. Installation of the product must start from the left side of the room, working to the right when working in front of the planks or facing the starting wall.
4. Install the second plank in the row by angling the end tongue into the end groove of the first plank. Be careful not to bend the corner of the plank. Maintain an expansion gap of approximately  $\frac{1}{4}$ " (6.35mm) from the wall. Start the second row by cutting a plank to the desired length. Keep in mind that the plank must not be shorter than 6" (15cm) to achieve the best appearance.
5. Install the first plank in the second row by inserting the long side tongue into the groove of the plank in the first row. This is best done with a low angle of the plank. Maintain pressure into the side seam as you rotate the plank to the subfloor. Install the second plank in the second row by inserting the short end tongue into the previously installed plank groove. Align the plank so that the long side tongue tip is positioned just over the groove lip of the plank in the first row. Working from the end seam, at a low angle,

insert the long tongue into the groove of the adjoining plank. Very little force is required to seat the tongue into the groove. You should feel the tongue lock into the groove.

6. Work across the length of the room installing planks along the wall in the first row and then aligning the planks in the second row. It is critical to keep these two rows straight and square, as they are the “foundation” for the rest of the installation. Check squareness and straightness often.
7. Cut the last plank in the first row and leave an expansion gap of around ¼” (6.35mm). Planks may be cut with a utility knife using the “score and snap” technique. The leftover of this plank may be used to start the third row if it’s a minimum of 8” (20.32 cm) long.
8. Continue installing planks and make sure to achieve a random appearance with end pieces of a minimum 8” (20.32 cm). Check that all planks are fully engaged; if a slight gapping is found, the gap can be tapped together by using a tapping block and a scrap of flooring to cover the tapping block in order to avoid damages on the planks.
9. When fitting under door casings, etc., the flexibility of the locking system becomes evident. If necessary, a flat pull bar may be used to assist in locking the planks.
10. When fitting around obstacles or into irregular spaces, planks can be cut utilizing a jigsaw or rotary cutting tool. It is often beneficial to make a cardboard template of the area and transfer this pattern to the plank.

## COMPLETION

1. Protect all exposed edges of the flooring by installing wall molding and/or transition strips. Make sure that no plank will be secured in any way to the subfloor.
2. For wet areas such as bathrooms caulk the perimeter of the floor with silicone caulk.
3. Protect the finished flooring from exposure to direct sunlight to reduce fading and thermal expansion.
4. Cutting resilient products into a fine point may lead to delamination. Use an ethyl cyanoacrylate-based glue to help fuse the resilient point together. Be sure to clean all glue from the top surface immediately. Alcohol-based glues may cause resilient products to swell.
5. Adhering tape to the surface of your resilient flooring could damage the surface.  
**Do not** use tape to secure floor protection directly to the floor during construction or renovation. Instead, adhere the tape to the material used to protect the floor and secure it to the base molding along the wall. A material such as ram board can also be used to protect your flooring.

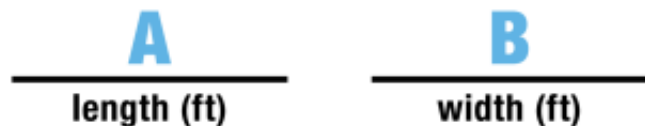
## FREQUENTLY ASKED QUESTIONS

1. **Is underlayment required?**  
Underlayment is recommended, but not required. We suggest using SMARTCORE Soft & Sound (Item #1191177 Model #LX50100001), which is also available at Lowe’s.
2. **Is a moisture barrier required?**  
No, a moisture barrier is not required but is recommended when installing over a concrete subfloor. It is optional over a wood subfloor.
3. **What is the max run length before you have to break the floor up with a transition?**  
There is no maximum run length that you need to install transition strips.
4. **Do you have to install transitions in doorways?**  
No, Matrix flooring does not require the use of transitions in doorways.
5. **Can it be installed over existing ceramic tile or sheet vinyl?**  
Yes, Matrix can be installed over existing ceramic tile and sheet vinyl as long as the existing floor is structurally sound, clean, flat, and free of broken pieces.
6. **Can Matrix be installed under cabinets?**  
As a floating floor, Matrix should butt up to the cabinets.
7. **Can Matrix be installed on walls/shower walls?**  
No, Matrix is intended to be used as a floor covering only.
8. **Is the expansion gap still required when installing as a glue-down?**  
Yes, the expansion gap is required around the perimeter of the room, as well as when butting up to fixed objects such as cabinets and bathtubs, even when gluing down the floor.
9. **Can Matrix be installed outside on a patio?**  
No, Matrix is intended to be used as an indoor floor covering only.

## PROJECT PLANNER

Follow the steps below to calculate the total number of cartons of Matrix flooring you will need for your project.

First, measure the length and width of your space (A, B).



Next, multiply the length (A) by the width (B) of your space to determine

$$\frac{A}{\text{length (ft)}} \times \frac{B}{\text{width (ft)}} = \frac{C}{\text{estimated square footage}}$$

the estimated square footage (C).

Next, multiply your estimated square footage (C) by 1.10 to account for the 10% waste factor (for cutting and installation errors), this will give you the total square feet required (D) to complete your project. Make sure you round up.

$$\frac{C}{\text{estimated square footage}} \times 1.10 = \frac{D}{\text{total required square feet}}$$

Finally, in order to find the total number of cartons you need (E), divide the total required square feet (D) by the carton square footage of the floor you are installing. Make sure

$$\frac{D}{\text{total required square feet}} \times 23.63 = \frac{E}{\text{total number of cartons}}$$

you round up.

## Documents / Resources



[SHAW MATRIX with Advanced Flex Technology](#) [pdf] Instruction Manual  
SHAW, MATRIX, with, Advanced, Flex Technology

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