

# RESILIENT INSTALLATION GUIDELINES FOR SPC PRODUCTS

## I. 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° - 85°F (13°-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 be fully adhered to the subfloor (including an additional 2'ft beyond the cabinets and islands).
- To minimize shade variation, mix and install planks from several cartons.
- Inspect all planks 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 which contain Portland or high alumina cement and meet or exceed the compressive strength of 3,000 psi are 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.
- 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.
- A second underlayment is allowed under any currently sold SPC Product with attached underlayment in a residential application. If installed over a second underlayment, this underlayment cannot be greater than 3 mm thick. IIC (ASTM E492-09) and STC (ASTM E90-09) lab testing on certain SPC products tested with and without a second layer of underlayment, to date, does not indicate that a second underlayment will provide additional acoustic benefit.

## 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. Use of a 6 mil black polyethylene is required to cover 100% of the crawl space earth. Crawl space clearance from ground to underside of 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. 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.
4. 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](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. 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.
- Surface must be permanently dry, clean, smooth, free of all dust, and structurally sound.
- Perform Bond testing to determine compatibility of adhesive to the substrate. Shaw 9050 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 Heating:** 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 degrees, 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 which contain Portland or high alumina cement and meet or exceed the compressive strength of 3,000 psi are 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) imbedded in concrete slabs. Requires the installer follow a specific nailing pattern to avoid penetration of the heat 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.
- This product can be installed over existing ceramic/porcelain tile products with up to a 1/4 inch wide grout joint. If the grout joint width exceeds 1/4 inch, a cementitious patching compound should be used to fill the grout joint to make it smooth with the surface of the tile.

## RAISED ACCESS PANEL SUBFLOORS

- Raised access panels must be stable, level, flat, free and clean of existing adhesives
- 24" x 24" panels are recommended.
- Lippage (variation of height) between of panels must not exceed 0.295" (0.75 mm)
- Gaps between panels must not exceed 0.039" (1mm)
- There should be no deflection of the individual panels – Concave less than 0.0295" (0.75 mm)
- Flatness 1/8" in 10'
- Stagger the flooring tiles/planks to overlap the access panels
- Telegraphing of access panel seams may be visible and is not considered a product defect nor warranted by the flooring manufacturer.

If needed overlay the panels with a 1/4" (6 mm) plywood and properly fasten to the access panels prior to the installation of the floorcovering. Prior to underlayment installation, repair any loose or unstable panels. Use the appropriate installation methods for the product.

## III. 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.**

**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.

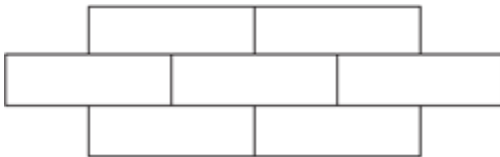
- Begin at the starting wall. Roll underlayment out parallel to the starting wall and allow the poly film to run 2 inches up the wall.
- After the flooring has been installed trim back the poly film from the wall.
- Roll the next course of poly film parallel to the first run and overlap a minimum of 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 doorjamb. Do not fasten wall moldings and or transition strips to the planks.

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



1. Assemble three or four rows well away from the starting wall. Begin by placing the tongue of the short plank toward the starting wall.
2. To start the first row, press the end seam of the second plank at an angle to the end seam of the first plank, and then lock them together by laying the plank down. Complete the entire first row in this manner.
3. To measure a shorter plank section for the end of the first row, place the final plank face down with the short tongue of the end seam toward the wall. Remember to allow for a minimum 1/4" expansion space. Draw a pencil line where this plank is to be cut.

4. Place the plank face down on the work surface and cut to size with a power saw. If you are using a hand saw, use a fine-toothed blade and cut the planks face up.
5. Use a cut piece of board from the previous row to start the next row. This starting plank section must be at least 12" long. If the piece is too short, start with a new board. Cut the new board in one-third, one-half or two thirds length sections, depending upon what is required to maintain the random stagger from one row to the next. Always ensure that the end joints are staggered at least 12 to 16 inches from one row to the next.
6. Place the short start board for the second row firmly against the side seam of the start board in the first row, but do not fold it down to lock it into place yet.
7. Attach the second plank of the second row to the first planks end seam; but again, do not fold these planks down into the locked position. You can easily construct wood wedges to help hold these planks in place in the unlocked position.
8. After you have connected three or four planks of the second row in this manner, you can now go back and lock the side seams of the first planks into position.
9. Use a carton of planks as a weight to hold down the locked planks (see diagram). Remove the wood wedges and lock each plank as you move down the remainder of each row. If needed, you may use a short length of a two-by-four as a tapping block to help with your alignment when constructing the starting rows. Remember to do this by holding the block firmly in your hand while tapping gently against the leading edge of the plank. NEVER use a hammer for this task because you may damage the plank edge and the locking ridge!
10. Once you have assembled three or four start rows, you can slide these rows into position against the start wall of the room. Remember to allow for proper expansion spaces, and use the spacers to maintain those expansion areas along all walls and around any fixed objects within the flooring area. As you finish the rows in rooms with long spans, continue to stay three or four planks ahead of the locked side seam position planks. Use the wood wedges to help maintain the raised, unlocked plank positions.
11. If the starting wall is uneven, the planks must be adapted to its contours. You can scribe the contour of the wall onto the first row of planks by using a ruler and a pencil to follow along the contour of the wall. Do not forget to allow for the minimum 1/4" expansion space from the wall. Disassemble the first row, cut the planks along the line you have drawn, and then reassemble. You must still use the spacers to maintain the expansion space along this wall.
12. To remove the first row for cutting, lift the planks a few inches and tap along the joint. Cut the planks as required. Re-connect all of the first row end seams and replace the first row by pressing the first row into place with the groove toward the edge of the planks that are already in position.
13. You may have to disassemble the flooring due to obstructions, etc. Just lift the row of planks a few inches and tap along the joint.
14. The released planks can then be pulled apart by sliding them out horizontally. Never bend connected planks downwards; this will damage the planks' locking ridges.
15. Measure and cut the planks in the last row to fit. Remember to allow for a minimum of 1/4" expansion space from the wall.
16. Use a full width scrap plank to mark your cutting line on the last row.
17. In areas such as a doorjamb or cabinet kick base where planks cannot be angled to lock into place, use a wood chisel to remove the locking ridge from the bottom of the plank groove. Apply a 1/8" bead of cyanoacrylate adhesive (commonly referred to as Super glue, or Gorilla glue) to the bottom groove, and gently tap the plank into place using a pull bar and hammer. Next, apply enough strips of painter's tape across this seam to hold the joint securely in place until the adhesive sets. Using a clean, soft cloth, carefully clean up any excess adhesive on the surface of the planks.
18. **Do not use tape to secure floor protection during construction or renovation.** Use ram board or similar to protect the floor.