

## **COMMERCIAL BIO BASED SHEET INSTALLATION GUIDELINES**

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### **GENERAL INFORMATION**

#### **Site Conditions**

- It is recommended that floor covering installation shall not begin until all other trades are completed.
- Material should always be visually inspected prior to installations. Any material installed with visual defects will not be considered a legitimate claim as it pertains to labor cost.
- HVAC System: Must be operational, maintaining the following conditions 7 days prior to, during and after installation.
- Temperature: The installation site must be between 65 ° F and 80 ° F.
- Humidity: The installation site's ambient relative humidity must be no greater than 65%.
- **Acclimation:** 72 hour acclimation required for both flooring and adhesive.

#### **Subfloor Testing**

- All substrates to receive moisture sensitive floor covering require proper moisture testing.
- Moisture Testing per ASTM 1869 CaCl: Results must not exceed 8 lbs.
- Moisture Testing per ASTM F-2170: Results must not exceed 85%.
- pH / Alkalinity per ASTM F-710: Results must be between 5-9.
- If subfloor exceeds these values, moisture mitigation should be performed.
- Perform Bond testing to determine compatibility of adhesive to the substrate.

#### **Storage and Handling**

- Rolls may be shipped flat in a pyramid stack not to exceed three rolls high. Upon receipt of material remove from the pallet and store rolls upright. Do NOT lay flat.
- Once delivered to the site properly store the rolls upright, remove the wrapping and slightly unroll to allow the flooring to relax.
- When more than one roll of a color is being installed, all material should be from the same batch and the rolls must be installed in consecutive order. If material from more than one batch is to be used, the job should be laid out so that different batch numbers are not installed side by side.

## APPROVED SUBSTRATES

### Concrete

**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).**

- Concrete floors shall be flat and smooth within **1/8" in 6 feet or 3/16" in 10 feet.**
- F-Number System: Overall values of FF 36/FL 20 may be appropriate for Bio-based floor coverings.

**WARNING: DO NOT SAND, DRY SWEEP, DRY SCRAPE, DRILL, SAW, BEAD BLAST OR MECHANICALLY CHIP OR PULVERISE EXISTING RESILIENT FLOORING, BACKING, LINING FELT , ASPHALTIC " CUTBACK" ADHESIVES OR OTHER ADHESIVES.**

These products may contain either asbestos fibers and/or crystalline silica. Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard. Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm. Unless positively certain that the product is a non- asbestos-containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content and may govern the removal and disposal of material. See current edition of the Resilient Floor Covering Institute (RFCI) publication Recommended Work Practices for Removal of Resilient Floor Coverings for detailed information and instructions on removing all resilient covering structures. For current information go to [www.rfci.com](http://www.rfci.com).

### Lightweight Concrete

- Lightweight aggregate concretes having dry densities greater than 90 lbs. per cubic foot may be acceptable under Bio-Based 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. 9050 primer can be utilized to promote adhesion.

### Wood SubFloors

Wood subfloors must be structurally sound and conform to guidelines of ASTM F 1482 and in compliance with local building codes

- Double-Layered APA rated plywood subfloors should be a minimum 1" total thickness, with at least 18" well ventilated air space beneath.
- Insulate and protect crawl spaces with a vapor retarder covering the ground. It is recommended that your chosen APA underlayment grade panels be designed for installation under Bio-based flooring, and carry a written warranty covering replacement of the entire flooring system.
- Always follow the underlayment manufacturer's installation instructions.
- Particleboard, chipboard, flakeboard, OSB, hardboard or similar are not recommended subfloor materials and require the additional layer of an APA 1/4" underlayment grade panel.

- **DO NOT** install over sleeper construction sub floors or wood sub floors applied directly over concrete.
- Bio-based flooring is not recommended directly over fire-retardant treated plywood or preservative treated plywood.

## Radiant Heated Floors

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.

## SUBSTRATE PREPARATION

### Porous substrate Installation only.

- Substrates must be structurally sound, clean, level and dry.
- Substrates must be free of dust, dirt, oil, grease, paint, curing agents, concrete sealers, adhesives, loosely bonded toppings, loose particles and any other substance or condition that may prevent or reduce adhesion.
- Substrates: Flat and smooth within 1/8" in 6 feet or 3/16" in 10 feet.
- Fill depressions or cracks with a cementitious patching / leveling compound that meets or exceeds Shaw Industries 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.
- For cracks or saw cuts deeper than 1", follow the preparation and application instructions for QuikFill. QuikFill is a 2-part urethane treatment that prevents future damage from moisture penetrating to the surface of the slab that may damage or breakdown adhesives or unapproved patching compounds.
- For areas where new trenches for plumbing have been poured, in order to protect the floor covering to be installed, Shaw Technical Support recommends applying a 2-part epoxy such as MoistureTEK. Ensure that the concrete has been properly prepared per the installation guidelines, before applying MoistureTEK. This will protect the floor covering from moisture related issues that could arise from the new concrete trench. Utilize QuickFil where the new concrete meets the old concrete. Apply MoistureTEK over the entire trench and up to 8 inches over the old concrete.

- For chemically abated substrates, ensure the proper cleaning methods have been taken to remove any residual abatement chemicals.
- If a chemical abatement has been performed, use Surface Prep EXT to remove any residual chemicals present. Once Surface Prep EXT has been properly cleaned and removed, apply one coat of MRP for additional protection.
- Curing compounds (**DO NOT USE**). If present they can interfere with the bond of the adhesive to the concrete. Seek assistance from a substrate manufacturer if curing agents are detected.
- Green sweeping compounds can be used but must be swept and removed immediately.
- For dusting / powdering / porous concrete / lightweight concrete prime with a latex primer such as 9050.
- For patches / levelers prime with a latex primer such as 9050.

## ADHESIVE & APPLICATION

**NOTE: DO NOT** use adhesive as a pressure sensitive adhesive. Installation of sheet goods require a semi-wet to wet installation. This will require determining the amount of adhesive spread and product installed to achieve adequate transfer and bond of adhesive to product and substrate. Refer to adhesive guidelines for additional information.

- The required adhesive: 4200 / 4151
- The required trowel size: 1/16" x 1/32" x 1/32" u-notched.
- Spread rate: 175-225 sq ft per gallon.
- RH limit: 99%
- CaCl: 12 lbs
- pH limit: 12
- Allow the adhesive an open time of 5 - 15 minutes (taking into account room climate conditions) prior to installing flooring into the adhesive.

## INSTALLATION

1. Measure, identify, and mark your control line for the sheet good installation.
2. Each Roll should be used in production sequence. Cut the required length off the roll, including enough to run up the wall 3" at either end. Allow material to lay face up and flat to relax for 24 hours prior to installation.
3. Drops are not reversed. Lay in the same direction.
4. Push the length of the sheet as close to the starting wall as possible, letting the extra length run up the wall at the far end.
5. The material should still be aligned on the control line.

6. Bar Scribe or place a straight edge on top of the material along the starting wall, and proceed to cut along the straight edge. This cut technique is a direct scribe. Pattern scribing, three wall scribing, use of a wall trimmer or freehand cutting all are acceptable methods as well.
7. Continue to free hand knife, pattern scribe, or direct scribe material for the remainder of the installation area.
8. Care should be taken not to crease material.
9. Backrolling the sheets for 24 hrs. may be performed to reduce roll memory.
10. Trim approximately 1/2" off one selvage edge of seam with a straightedge and sharp knife or edge trimmer. Cut second sheet allowing proper extra length. Position the second sheet with a 1/2"-1" overlap over the first sheet at the seam.
11. Snap white chalk lines or use pencil along areas where adhesive will be spread to ensure an even and straight line of adhesive. **DO NOT** use permanent marker, pen or colored chalk.
12. Carefully place flooring into adhesive, working toward the wall. **DO NOT FLOP MATERIAL IN** – air may be trapped, causing bubbles.
13. After material has been laid into the adhesive, recess scribe the seams using either the scribe blade or scribe pin. Set scribe to achieve a gap no greater than the width of a standard utility knife blade (.6mm) when needed as a groover guide. Seams must not be too full or tight.
14. Hold the knife blade straight up and down to make the final cut. **DO NOT UNDERCUT**. Wide gapped or undercut seams will prevent quality welds.
15. Repeat the same procedure for additional seams in the room.
16. Recommended to massage-curl the end joints to help ensure they lay flat. Putting weight on the end joints will help to ensure proper bonding as the adhesive sets up.
17. Roll the glued areas right away to within 6" of the seam on either side with a 3 section 100 lb. roller. Roll the seam area with a hand-seam roller to bring the seam edges to equal heights. Reroll the entire glued floor area with the 100 lb. roller within the working time of the adhesive. Continue to roll the floor throughout the working day to ensure a proper bond.
18. Heat welding is required to properly bond seams. **Heat weld seams 12 hours after installation when using 4200 / 4151. See heat weld instructions.**
19. Contact Shaw product support for assistance if not familiar with scribing techniques or heat welding

## Heat Welding

1. **NOTE:** If welding Biobased or Linoleum products to vinyl sheet goods, it is required to use the Biobased or Linoleum weld rod. Vinyl weld rods will not weld or adhere to the Biobased or Linoleum products.
2. Professionally heat welded seams provide a strong, watertight, hygienic, monolithic surface. Heat welding seams requires training, experience and the proper tools to achieve success.
3. The welding rod (4mm) is designed to melt, thermally bonding the flooring and rod together. Heat welding should be done 12 hours after installation using 4200 / 4151.

- The depth of the groove should be approximately 2mm or greater without penetrating the backing. Insure the width is between 3.5 and 4 mm wide. Too narrow will prevent sufficient bond strength.  
**Note: A 4.5mm hand groover may produce a 3.8mm groove.** The groove must also be centered along the two edges. If the groove is too wide, gaps at the edge of the weld and insufficient bond may occur.
- Clean grooves thoroughly of all foreign contamination, including dust. Protect grooved seams from contamination including liquids. It is recommended to groove seams immediately prior to welding to insure a clean groove.
- Determine the proper welder temperature by practicing on bonded scrap material creating a test seam. Fine tune temperature and pace. Long extension cords may affect welding temperature. Verify groover depth and width. Test weld bond by pulling on completed test weld. The weld should break before pulling out. When the appropriate temperature is reached a ridge (wash) will form on each side of the welded rod.
- A temperature too high will cause the flooring at the edges of the weld to blister which may not be apparent until the final skive is completed. Example: A successful welded seam was created with a Turbo\* linoleum tip on a Leister\* digital welder set at 600 degrees Fahrenheit by installer "A". The installer, the speed and the equipment may cause the appropriate welding temperature to vary.
- While the welding rod is still warm, trim off 1/2 the excess rod with a spatula knife and trim plate or Mozart™ skiver with the linoleum trim plate. Other Skiving tools such as the Turbo™ planer are acceptable.
- After the rod has completely cooled to room temperature, make the final trim pass without the trim plate in one continuous movement. Always use clean sharp tools to insure a smooth finished product.
- Trimming welds on Flash coved areas may require allowing the weld to completely cool before the first skive.

## Flash Cove Installation

- Flash coving is an extension of the sheet flooring up the wall to form a wall base.
- 4"– 6" flash coving is common. For all heights in excess of 6" check applicable local building codes.
- Use SGA tape in flash coved areas.
- Adhesive instructions must be followed to obtain a satisfactory bond. Always read the instructions.
- After fitting material into SGA tape, use a hand roller to insure the bond.
- It is recommended to border cove in order to prevent damage to corner cuts when placing the material into the adhesive.
- It is recommended to use a nonmagnetic aluminum Cove Cap and rigid Cove Stick with a true radius. Example: Futura™ 901-MFA 1/8 silver square metal Cove Cap and Futura™ 1 1/2 inch Cove Stick VT 052.
- Use "Die Cutters" when mitering inside and outside corners in cove cap. A die cut corner allows for a continuous section of cap through the corner, without an exposed sharp point that could put persons or property at risk.
- Caulk top of cap to wall and door jambs to fill any cracks or gaps and ensure a watertight finish.

# Installation



**NOTE:** Adhering tape to the surface of the flooring could damage the surface. **DO NOT** use tape to secure floor protection directly to the flooring surface during construction or renovation. Adhere tape to the protection material, such as Ramboard, and adhere the tape to base molding along the wall.

**NOTE:** Recommended to use floor protection after installation. **DO NOT** use a plastic adhesive based protection system.