

COMMERCIAL RESILIENT SHEET INSTALLATION

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 installation. 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 85°F (18°C and 29°C)
- Acclimation: 48 hour acclimation required for both flooring and adhesive.

Substrate 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 90%.
- pH / Alkalinity per ASTM F-3441: Results must be between 7-10.
- If the subfloor exceeds these values, moisture mitigation should be performed.
- Perform Bond testing to determine compatibility of adhesive to the substrate.

Storage and Handling

- Store all rolls standing upright.
- **DO NOT** lay rolls for long periods of time.

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. (3.2mm in 1.8m or 4.8mm in 3m)
- F-Number System: Overall values of FF 36/FL 20 may be appropriate for 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.

Lightweight Concrete

- Lightweight aggregate concrete having dry densities greater than 90 lb/ft³ (1441.7 kg/m³) may be acceptable under 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. Shaw 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" (25.4mm) total thickness, with at least 18" (457mm) 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 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 sub floor materials and require the additional layer of an APA 1/4" (6.3mm) underlayment grade panel.
- **DO NOT** install over sleeper construction sub floors or wood sub floors applied directly over concrete.
- Not recommended directly over fire-retardant treated plywood or preservative treated plywood.
- Due to expansion/contraction of individual boards during seasonal changes a 1/4" (6.3mm) or thicker APA rated underlayment panels must be installed over these types of subfloors.
- Wood flooring installed directly over concrete is **NOT** an approved subfloor.

Crumb rubber underlayments are **NOT** an acceptable option for use with resilient floor coverings due to performance issues resulting from chemical incompatibilities.

Existing Floor Coverings

Resilient Flooring:

- Must be single layered, non-cushion backed, fully adhered, and smooth.
- Show no signs of moisture or alkaline.
- Waxes, polishes, grease, and grime must be removed.
- Cuts, cracks, gouges, dents and other irregularities in the existing floor covering must be repaired or replaced.

NOTE: THE RESPONSIBILITY OF DETERMINING IF THE EXISTING FLOORING IS SUITABLE TO BE INSTALLED OVER TOP WITH FLOORING, RESTS SOLELY WITH INSTALLER/FLOORING CONTRACTOR ON SITE. IF THERE IS ANY DOUBT AS TO SUITABILITY, THE EXISTING FLOORING SHOULD BE REMOVED, OR AN ACCEPTABLE UNDERLAYMENT INSTALLED OVER IT. INSTALLATIONS OVER EXISTING RESILIENT MAY BE MORE SUSCEPTIBLE TO INDENTATION.

Quarry Tile, Terrazzo, Ceramic Tile, Poured Floors (Epoxy, Polymeric, Seamless):

- Must be totally cured and well bonded to the concrete and free of any residual solvents and petroleum derivatives.
- Waxes, polishes, grease, grime, and oil must be removed.
- Show no signs of moisture or alkalinity.
- Cuts, cracks, gouges, dents, and other irregularities in the existing floor covering must be repaired or replaced.
- Fill any low spots, holes, chips and seams that may telegraph through the new flooring.
- Grind any highly polished or irregular/smooth surfaces.
- Quarry tile or Ceramic tile grout joints and textured surfaces must be filled with an embossing leveler or substrate manufacturer approved material.

Radiant Heated Floors

The heating systems components must have a minimum of 1/2" (12.7mm) 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 (18°C), after installation gradually increase the temperature in increments of 5° F (-15°C) to avoid overheating. Maximum operating temperature should never exceed 85°F (29°C). 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 (20684 kPa) 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.

SUBSTRATE PREPARATION

- Substrates must be structurally sound, clean, flat 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 must be flat and smooth within $\frac{1}{8}$ " in 6 feet or $\frac{3}{16}$ " in 10 feet (3.2mm in 1.8m or 4.8mm in 3m).
- Fill depressions or cracks with a cementitious patching / leveling compound that meet or exceed 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 (20684 kPa) are acceptable.
- For cracks or saw cuts deeper than 1" (25.4mm), follow the preparation and application instructions for Shaw 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 break down 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 Shaw Surface Prep EXT to remove any residual chemicals present. Once Shaw Surface Prep EXT has been properly cleaned and removed, apply one coat of Shaw 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 Shaw 9050.
- For patches / levelers prime with a latex primer such as Shaw 9050.

ADHESIVE AND APPLICATION

NOTE: DO NOT use adhesive as a pressure sensitive adhesive. Installation of sheet vinyl requires 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.

To receive an underbed warranty, the product being installed must be approved for underbed applications (see product specification) and must be installed with S150, 4200 or 4151.

Adhesive	CaCl Limit	RH Limit	PH Limit	Heat Welding
S150	N/A	95%	7-11	After 1 hour
2200	10	95%	5-12	After 12 hours
4200	12	99%	5-12	After 12 hours
4151	10	99%	11	After 12 hours

Trowel Size	Coverage
1/16" x 1/32" x 1/32" U-notch 1.59mm x 0.79mm x 0.79mm	175-225 ft ² / gallon 16.26-20.9 m ²

INSTALLATION

Cutting and Fitting

- Measure, identify, and mark your control line for the sheet good installation.
- Cut the required length off the roll, including enough to run up the wall 2" (50.8mm) at either end.
- 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.
- The material should still be aligned on the control line.
- 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.
- Push the fitted sheet gently to the starting wall while keeping it aligned.
- Free hand knife the opposite wall of the starting wall. Pattern Scribing or direct scribe is also acceptable. Continue to free hand knife, pattern scribe, or direct scribe material for the remainder of the installation area.
- Opening up the sheets in the width/length are acceptable. **DO NOT** fold as care should be taken not to crease material. **DO NOT** back roll vinyl backed floorings.
- 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.

- Carefully place flooring into adhesive, working toward the wall. DO NOT FLOP MATERIAL IN—air may be trapped, causing bubbles.
- After material has been laid into the adhesive, recess scribe the seams using either the scribe blade or scribe pin.
- Hold the knife blade straight up and down to make final cut. DO NOT UNDERCUT.
- Repeat the same procedure for additional seams in the room.
- 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.
- Roll the glued areas right away to within 6" (152.4mm) of the seam on either side with a 3 section 100 lb. (45.4kg) roller. Roll the seam area with a hand-seam roller to bring the seam edges to equal heights. Re-roll 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.
- Heat welding Shaw sheet flooring is always recommended.

Heat Welding

- **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.
- Professionally heat welded seams provide a strong, watertight, hygienic, monolithic surface.
- The welding rod (4 mm) is designed to melt at the same temperature as the sheet flooring, thermally fusing the two together.
- Seam edges should be slightly gapped and vertical. Wide gapped or undercut seams will prevent quality welds.
- The depth of the groove should be 1/2 to 2/3 the thickness of the material using a 3.5 mm grooving tool. Be careful not to go too deep. The groove must also be centered along the two edges. This is very important to ensure proper strength and bonding of the welding rod.
- Clean grooves thoroughly of all foreign contamination, including dust.
- Use only professional quality welding equipment that will maintain sufficient temperatures. A narrow preheat 4 mm tip is required.
- Preheat welding gun prior to welding. Preheat to 450°F (232°C) and then adjust up or down.
- Practice on a scrap piece to fine tune temperature and pace. Long extension cords may affect welding temperature settings.
- Determine the correct welding speed by ensuring that the welding rod actually fuses into the groove. On the scrap practice piece try to pull the weld out of the groove. If the rod pulls out of the groove adjust temperature until it will no longer pull out of the groove.
- Tip must remain parallel to the finished floor. A small ridge must form on either side of the welding rod, at the vinyl surface. If no ridge forms, you have not heat welded the seam correctly.

- While the welding rod is still warm, trim off 1/2 the excess rod with a spatula knife or Mozart skiver and trim plate in one continuous movement.
- After the rod has cooled to room temperature, make the final trim pass using a razor sharp spatula knife or Mozart skiver in one continuous movement.

Chemical Weld

- Ensure seam is completely clean and dry.
- Pour entire contents of sealer into applicator bottle and allow any air bubbles to dissipate.
- Insert the tip of the applicator down into the seam. Pull back at a steady pace applying a constant pressure on the bottle, applying enough sealer to seal the edges of the sheet and leaving a small bead (1/8") of sealer on the surface of the seam.
- Keep all traffic off the seam for a minimum of 24 hours.

Flash Cove Installation

- Flash coving is an extension of the sheet flooring up the wall to form a wall base.
- 4" (101.6mm)– 6" (152.4mm) flash coving is common. For all heights in excess of 6" check applicable local building codes.
- 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 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.

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.