

**STOP! PLEASE READ THIS DOCUMENT IN ITS ENTIRETY BEFORE INSTALLATION**

## 1 GENERAL INFORMATION

### 1.1 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 o F and 85 o F.
- Acclimation: 48-hour acclimation required for both flooring and adhesive.
- Make sure all material is from the same batch number.
- Ensure all recommendations for sub-floor and jobsite conditions are met before starting installation. Directional designs are optional, however, once the installation is started, you have accepted those conditions.

### 1.2 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.

### 1.3 GAPPING

The leading causes of objectionable gaps in LVT are improper adhesive selection, poor acclimation, and lack of a stable temperature before, during, and 72 hours after installation.

A stable temperature means keeping the product, subfloor, and ambient temperatures as close to each other as possible. Deviation between these temperatures can cause product growth or shrinkage.

Shaw recommended adhesives have been developed and tested to provide exceptional shear strength. After the adhesive cures, this high shear strength will minimize product gapping caused by temperature changes.

Shaw does not cover damage or gapping resulting from the use of pressure sensitive adhesives due to their typically low shear strength.

## 1.4 STORAGE AND HANDLING

- Store cartons of tile or plank products flat and squarely on top of one another. Preferably, locate material in the “center” of the installation area (i.e. away from vents, direct sunlight, etc.)
- Flooring material and adhesive must be acclimated to the installation area for at least 48 hours before installation.
- When palletizing on a jobsite vinyl plank or tiles need to be stacked 2 rows high side by side with no airspace between. Then quarter turned for 2 rows side by side. Do not stack more than 5 cartons high. A 5/8” or thicker plywood must also be placed on the pallet first.
- Do not stack pallet’s 2 high unless utilizing a 1” thick plywood in between pallets.

## 2 APPROVED SUBSTRATES

### 2.1 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 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).

### 2.2 LIGHTWEIGHT CONCRETE

- Lightweight aggregate concrete having dry densities greater than 90 lbs. per cubic foot 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.

## 2.3 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 your chosen APA underlayment grade panels be designed for installation under flooring and carry a written warranty covering replacing the entire flooring system.
- Always follow the underlayment manufacturer's installation instructions.
- Particleboard, chipboard, flakeboard, OSB (Oriented Strand Board), hardboard or similar are not recommended sub floor 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.
- Not recommended directly over fire-retardant treated plywood or preservative treated plywood.
- Crumb rubber underlayments are not an acceptable option for use with resilient floor coverings due to performance issues resulting from chemical incompatibilities.

## 2.4 STRIP – PLANK WOOD FLOORING

- 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.

## 2.5 EXISTING FLOOR COVERINGS

### 2.5.1 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 OF WITH RESILIENT, 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.

## **2.5.2 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.

## **2.5.3 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 panels must not exceed 0.0295" (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.

## 2.6 RADIANT HEATED FLOORS

The heating system's 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. The 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.

### 2.6.1 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 sets. 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.

### 2.6.2 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.

## 3 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 1/8" in 6 feet or 3/16" in 10 feet.
- 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 are acceptable.
- For cracks or saw cuts deeper than 1", 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.

## 4 ADHESIVES

(Use of an epoxy adhesive is recommended for installation in severe conditions, and is available upon request)

### 4.1 SHAW 4200

Installer friendly, premium high strength (non-staining) acrylic adhesive, designed to permanently install SHAW flooring. May be used on all concrete grades: on, above, or below grade without excess moisture, and suspended approved wood floors.

- May-be used for installing over existing, non-cushioned resilient flooring that has been prepared according to Shaw's recommended methods.
- Non-flammable, moisture resistant up to (99% RH), alkali resistant (10PH), and freeze thaw stable (to 10 °F) for 1 cycle.
- Excellent resistance to plasticizer migration and sets to a tough permanent bond. Zero (calculated) VOC's and CRI Green Label plus Approved.
- Must be used to receive exclusive under bed warranty.
- Shelf Life is 1 year when stored at 70°F
- Coverage: 175-225 sq. ft. /gallon.
- Traffic: Avoid all foot traffic for first 12 hours after installation. Avoid heavy traffic or rolling loads for 24 hours if floor finish is applied to allow time to cure for both new floors and resurfaced floors.

- Post Install Clean: Wait 24 hours before beginning Initial Maintenance Cleaning.

**Note:** To properly apply Shaw 4200 snap white chalk lines along areas where adhesive will be spread to ensure an even and straight line of adhesive. Spread adhesive with a 1/16" (wide) x 1/32" (depth) x 1/32" (apart) trowel to cover the chalk line on one side and meet up to it on the other. If glue is spread over the chalk line it will need to be removed. (DO NOT overlap adhesive.) -Troweling new adhesive over an area already spread may result in telegraphing. Be very careful not to leave any adhesive ridges or puddles.

**Porous substrates:** Resilient flooring may be placed into adhesive after 10 –20 minutes open time. Install resilient flooring into adhesive when the spacing in between the adhesive transitions from opaque to clear. Roll with a 100 lb. roller immediately after flooring is placed, ensuring complete contact with the adhesive. DO NOT exceed the 2 hours working time.

**Non-porous substrates:** Install resilient flooring into adhesive when it becomes 80% clear (dry to touch, is tacky but no transfer to fingers). This will normally require 30 to 60 minutes of drying time at suggested installation temperature and humidity, DO NOT exceed 2 hours working time.

Roll with a 100 lb. roller immediately after flooring is placed, ensuring material has complete contact with adhesive.

**IMPORTANT:** DO NOT use Shaw 4200 as a pressure sensitive adhesive. Loss of adhesion can result if the flooring is not installed within the working time of the adhesive. DO NOT allow the adhesive to "skin" over or dry. Too much open time will result in an insufficient bond.

Perform Bond testing to determine compatibility of adhesive to the substrate. Shaw 9050 primer can be utilized to promote adhesion if needed.

**Note:** Open time and working times may vary based on temperature, humidity, substrate porosity, trowel size and air flow.

## 5 INSTALLATIONS

### 5.1 LAYOUT AND INSTALLATION:

- Install using conventional tile installation techniques.
- Carefully determine where to begin tile installation.
- It is customary to center rooms and hallways so borders are not less than half a tile.
- Working out of multiple boxes at a time is recommended.
- In hallways and small spaces, it may be simpler to work lengthwise from one end using a center reference line as a guide.
- Make sure cut edges are always against the wall.
- To properly cut products score the top side of the material with a utility knife. Bend the product and finish the cut through the backside. This will ensure the cleanest cut. It may be necessary to use a heat gun to cut around vertical obstructions. Allow the heated tiles to return to room temperature before installation.

- Roll the plank/tile with a 3 section 100 lb. roller 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.
- IMPORTANT! ANY ADHESIVE AT SEAMS OR ON FINISHED SURFACES OF TILE MUST BE REMOVED WHILE THE ADHESIVE IS STILL WET.

## 5.2 SEAMLESS INSTALLATIONS:

36"x36" square edge are approved for seamless installations. The 36"x36" sections have different requirements for site acclimation, but are installed in essentially the same manner as described under CONVENTIONAL INSTALLATIONS using Shaw 4200 with trowels.

- Remove tile from carton and store flat in stacks (not to exceed 6" in height) at temperatures and durations called for by the adhesive used. This allows tile to adjust to room temperature. Tile will then lay flat and conform to the contour of the sub-floor when installed.
- Lay out field. For FLASH COVING, the last sections should end at least 6" from the wall to allow space for use of router and hot air welding tool around the room perimeter. Follow the instructions under FLASH COVING to cut and dry-fit appropriate material.
- Apply the adhesive, per the instructions, and install the field, making sure to properly roll and cross roll with the sectional roller. Allow the adhesive to cure overnight.
- Using a scrap piece of tile, set the router so that the blade cuts a groove to a depth of approximately one half of the thickness (~.060 in.) of the tile. Route all field seams in one direction only, being careful to keep the groove centered on the seam as closely as possible. Use a chamfering plane to router cove pieces where the router cannot be operated.
- While seamless installations are usually flash coved, top set cove base or other treatment may be used at the floor-wall junction. In these instances, use a chamfering plane to finish the groove close to the wall where the router cannot be operated.
- Preheat the hot air welding tool. Using the 4mm welding nozzle, weld the bead into the groove.
- Trial weld a few scrap pieces before starting on the floor so that adjustments in the heat setting may be made.

NOTE: Beginners may find it easier to work with a lower heat. However, with experience, welding will be faster with a higher heat. A lower heat is recommended for correcting mistakes or welding in awkward places. A good weld is achieved when a small amount of melted bead overflows along the edges of the groove.

- After the weld has cooled, shave off the excess bead with a spatula. If the bead is shaved before it has cooled, it will shrink below the surface of the flooring. Keep the spatula sharp by periodic honing with a fine sharpening stone.
- After welding and trimming all seams in one direction, repeat the routing, welding, and trimming procedures on all seams running in the other direction.



## 5.3 FLASH COVE INSTALLATIONS:

Coving of tile up the wall eliminates accumulations of dirt and bacteria at the floor-wall junction. CONVENTIONAL or SEAMLESS INSTALLATIONS may be flash-coved. Install a suitable cove cap strip (either metal or plastic) around the entire room. Exercise care so that the top of the cove cap strip height is consistent. Use either flat-headed nails or contact bond adhesive to cove capping.

1. Place a cove strip at floor-wall junction to support tile at the bend.
2. When installing tiles, lay out the field so that it ends approximately 6" from the wall.
3. Install the field in accordance with the procedures listed under either CONVENTIONAL or SEAMLESS INSTALLATIONS and allow the adhesive to cure for at least 24 hours. This is critical for properly forming coving and achieving a finished appearance.
4. Dry cut cove tile pieces to fit. Remove pieces and apply adhesive to the exposed floor and wall. Install the pieces and roll thoroughly with a hand roller. Do as large an area as practical to avoid repeated mixing of adhesive batches. Allow a minimum of 24 hours prior to Heat welding the seams.

## 6 MAINTENANCE AND FINISHING

There are 3 options for post installation cleaning and maintenance of Shaw Homogeneous Resilient Tile

- OPTION 1: Initial Maintenance Cleaning - This is a post installation light cleaning and leaving tile as is.
- OPTION 2: Burnishing or Dry Buffing – This is a maintenance option to develop and maintain shine or gloss level of tile.
- OPTION 3: Floor Finish Application – Application of a finish post installation.

### 6.1 OPTION 1: INITIAL MAINTENANCE CLEANING

#### Light Soiled Areas

- Sweep or dust mop the floor to remove any large debris. Never use oil base treated dust mops.
- Clean with a damp mop or use an auto scrubber with neutral cleaner. Rinse with clean water.

#### Heavily Soiled Area

- Use a broom or vacuum to remove dust and dirt particles.
- Use a mixture of regular neutral cleaner/degreaser and water, as per manufacturer's instructions on dilution factor.
- Spread the solution evenly over the floor using a mop.
- Wait 10 to 15 minutes before starting to clean. Do not allow the solution to dry on the floor.

- Use a 175 – 350 rpm rotary swing machine or an auto scrubber equipped with a red fiber pad. A soft nylon brush can be used in difficult-to-reach areas.
- Wet vacuum or mop up the residue.
- Rinse with clean tempered water with a mop or an auto scrubber.
- Let the floor dry completely.
- No wax or sealer is required, and the floor can now be used as is.

NOTE: It is very important to follow the specific directions for cleaning Shaw Homogeneous Resilient Tile. Treating it otherwise can negatively impact visual appearance and performance. Mixed lots cannot be made uniform by cleaning. Maximum lot sizes are 10,000 square feet.

IMPORTANT: Never buff in excess of 375 RPM.

## 6.2 OPTION 2: BURNISHING OR DRY BUFFING

- Following the initial or regular maintenance, the floor is clean and dry buffing can be performed using a high-speed rotary machine (1200 - 1500 rpm) equipped with a white pad or equivalent.
- By moving forward and backward, the desired gloss level will be determined by the number of moving sequences of the rotary machine. Generally, start with 10 passes to increase gloss level. Adjust the number of passes for desired gloss level.
- Note: To avoid damaging the floor, care must be taken when dry buffing. Do not let the rotary machine turn without moving as permanent damage, like burns, could appear on floor surface.

## 6.3 OPTION 3: FLOOR FINISH APPLICATION

Note: No floor finish, wax or sealant is required for the Shaw Homogeneous Resilient Tile. The gloss level can be maintained by dry buffing, if needed. However, it is possible to apply a floor finish.

- Prepare the surface by following “heavily soiled areas” instructions in the initial maintenance procedure.
- Always follow the finish manufacturer’s instructions for mixing and method of application.
- It is also recommended that if finish is applied, additional cleaning products be from the same manufacturer due to compatibility issues.

### Recommended Finishes

- Solid Care Epic Urethane
- Dr. Schutz Waxnomor
- Matte Finish: Diversey Carefree Matte® Hilway Direct Plus Matte
- Gloss Finish: Diversey Carefree® Hilway Direct Plus Gloss

## 6.4 ROUTINE MAINTENANCE PROCEDURES

- Sweep or vacuum daily to remove dust and dirt. If necessary, clean with a damp mop and a regular neutral cleaner.
- Allow the floor to dry completely before allowing traffic.
- For areas that are more heavily soiled, follow the section “Heavily soiled areas” instructions in the “Initial Maintenance procedure” section.
- To adjust the gloss level: follow the steps in the “Dry buffing” section.
- Other option to adjust the gloss level without a high-speed rotary machine: Spray a diluted “spray buff floor finish” while using a swing machine (175 – 350 rpm) equipped with a white pad.