ECOWORX RESILIENT PLANK AND TILE 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.
- Surface temperature should not exceed 100F (38C) from sunlight, bed bug treatment, steam mop, etc, and temperatures should not fall below 55F (13C). Exposing product to temperatures outside the recommended range could cause expansion of resilient flooring.

1.2 SUBSTRATE TESTING

- All substrates to receive moisture sensitive floor covering require proper moisture testing.
- Moisture Testing per ASTM F-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, not to exceed 12 boxes 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.

- 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.

2.2 LIGHTWEIGHT OR GYPSUM BASED 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 an 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 ⅛" 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 AND APPLICATION

NOTE: DO NOT use adhesive as a pressure sensitive adhesive. Installation of EcoWorx Resilient plank and tiles 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 LokWorx+ Resilient 4200.

Adhesive	CaCl Limit	RH Limit	PH Limit
4200	12	99%	5-12
MS Resilient (Wet Areas)	N/A	N/A	N/A

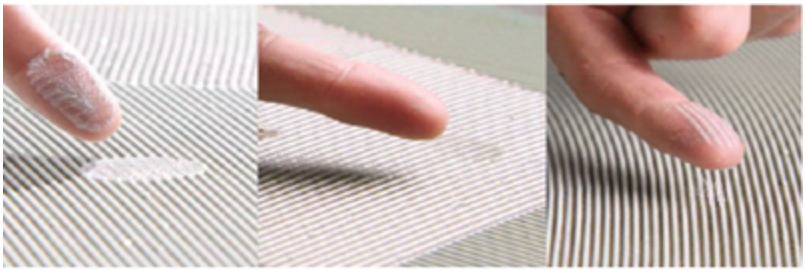
Substrate Porosity*	Trowel Size	Coverage

Non-porous - 4200/MS Resilient	1/16" x 1/32" x 1/32" U-notch	175-225 ft2 / gallon
Porous - 4200	1/16" x 1/16" x 1/16" Sq-notch	140-170 ft2 / gallon

*Porosity as determined per ASTM F3191. If a drop of water is fully absorbed by the subfloor in 1 minute or less, the subfloor should be considered porous. Otherwise, it should be considered nonporous.

Working Time Examples

Wet Dry Ready



5 INSTALLATION

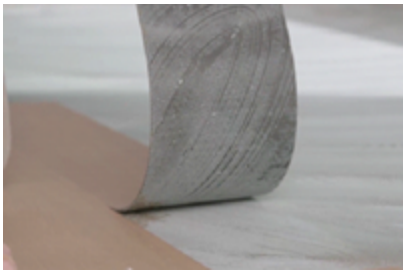
- Installing out of multiple boxes is recommended.
- EcoWorx Resilient plank or tiles must be installed joint-tight and tension-free.

5.1 LAYOUT

- Install using conventional tile and plank installation techniques.
- Carefully determine where to begin EcoWorx Resilient tile or plank installation.
- It is customary to center rooms and hallways, so borders are not less than half a tile or plank.
- Measure the installation in both directions.
- Mark center line A for length of room, following with a center line of the width B.
- Determine layout is square my using the 3,4,5 method (Pythagorean Theorem).

5.2 APPLYING ADHESIVE

- **NOTE: DO NOT** use adhesive as a pressure sensitive adhesive. Installation of EcoWorx Resilient plank and tiles requires a semi-wet to wet installation.
- Refer to Installation guidelines on bucket of adhesive for open and working times.
- Spread adhesive using the trowel per installation guidelines. If the trowel notches show wear it is recommended to replace.
- Ensure adequate transfer of adhesive to the back of the plank.



Lockworx + Resilient 4200

- Porous Substrate: 60-80% transfer to back of product.
- Non-porous Substrate: 30-50% transfer to the back of the product.

MS Resilient: 100% Transfer

5.3 INSTALLING ECOWORX RESILIENT

- Confirm back of product is clean of debris or dust prior to installation.
- Flooring should have a minimum of 6 – 8" seam stagger for planks. 1/2 or 1/3 stagger for tiles.
- Once the adhesive open time is achieved, place the first plank or tile along the chalk line.

- Repeat the process of installing the first row planks. For tile installation a pyramid layout is recommended
- Cut plank or tiles using a sharp utility knife and straight edge.
- Make sure cut edges are always against the wall.
- Roll the plank or tile with a 3 section 100 lb. roller. Re-roll the entire glued flooring 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.

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.