COMMERCIAL RESILIENT PLANK AND TILE 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.
- 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 F-1869 CaCl/MVER and ASTM F-2170 In-situ Relative Humidity: Testing must be performed per latest revision. Three tests must be conducted for the first 1000 SF and one additional test per 1000 SF.
- Perform Bond testing to determine compatibility of adhesive to the substrate.

New Concrete Substrate:

- For new construction or newer slabs with an intact moisture barrier, initial moisture levels should recede over time.
- pH / Alkalinity per ASTM F-3441: Refer to adhesive section for specification of ranges. Test results must not exceed the ranges specified by the adhesive.
- Moisture Testing per ASTM F-1869 CaCl/MVER: CaCl/MVER limits are based on adhesive used. Refer to adhesive section for limits.
- Moisture Testing per ASTM F-2170 In-situ Relative Humidity: In-situ Relative Humidity limits are based on adhesive used. Refer to adhesive section for limits.

Existing Concrete Slabs:

- For older slabs or slabs on grade with a prior history of moisture related issues, moisture mitigation must be completed if exceeding the limits below.
- pH / Alkalinity per ASTM F-3441: Refer to adhesive section for specification of ranges. Test results must not exceed the ranges specified by the adhesive.
- Moisture Testing per ASTM F-1869 CaCl/MVER: Results must not exceed 12 lbs.
- Moisture Testing per ASTM F-2170 In-situ Relative Humidity: Results must not exceed 95%.

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 a minimum of 48 hours prior to 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.

IMPORTANT INFORMATION

Gapping

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

Temperature

A stable temperature means keeping the product, subfloor, and ambient temperatures as close to each other as possible. Deviation between these temperatures can cause excessive product growth or shrinkage. It is important to maintain temperatures within a temperature range of 65-85 degrees.

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.

- 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.

GYPSUM & LIGHTWEIGHT CONCRETE SUBFLOORS

- 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.
- Substrates must be primed with 9050 primer or comparable to reduce porosity and promote the bond of adhesive.
- 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 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" 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.

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.
- 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 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.

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.

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.

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.

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.

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 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 Surface Prep EXT to remove any residual chemicals present. Once Surface Prep EXT has been properly cleaned and removed, apply one coat of BC9000 Barrier Coat 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 AND APPLICATION

Adhesives provide variations of shear and peel strength depending on chemistry and application. The use of a proper adhesive is important for installation as the adhesive provides the bond of the flooring

to the substrate to restrict movement. It is important to understand the site conditions and installation in choosing the correct adhesive for the installation.

(HS) Hard Set Adhesive

- Hard Set adhesives provide high shear strengths that will minimize product gapping caused by temperature changes. Hard Set adhesives allow for a working time up to 1 hr depending on site conditions. Hard Set adhesives require installation as a semi-wet to wet-set installation. Refer to adhesive guidelines for proper application.

(TPS) Transitional Pressure Sensitive Adhesive

- Transitional pressure sensitive provide a longer working time during installation. TPS adhesives allow for a working time up to 3 hrs depending on site conditions that can be installed as soon as the adhesive is dry to touch, semi-wet or wet-set. Refer to adhesive guidelines for proper application.

(PSA) Pressure Sensitive Adhesive

- Pressure sensitive adhesives allow for maximum working time during installation with a range of 6-8 hrs depending on site conditions that can be installed as soon as the adhesive is dry to touch, semi-wet or wet-set. Refer to adhesive guidelines for proper application.

NOTE: FOR INSTALLATION OF PLANK AND TILES WITH ADHESIVES BELOW, PLEASE REFER TO ADHESIVE SPECIFICATION (*) FOR PROPER APPLICATION.

Trowel Size: Refer to adhesive specification for trowel size and proper application when installing over porous or not porous substrates.

Open Time/Flash Time: Open time begins at the time of adhesive application to the period the adhesive is ready to accept flooring.

Working Time: Working time begins at the start of installation of flooring until the adhesive is inactive, too dry, or past working time stated by the adhesive guidelines.

*To receive an underbed warranty, the product being installed must be approved for underbed applications (see product specification).

*Adhesive	Type	CaCl/ MVER Limit	RH Limit	pH Limit	Open Time	Working Time	*Underbed Warranty	Recommended Application
S150	HS	N/A	95%	7-11	10min	1hr	Yes	Ideal for heavy commercial applications with a need for quick occupancy that is subject to heavy and static loads.
2200 Resilient	TPS	10lbs	95%	5-12	20-30min	3hr		Ideal for general commercial environments where there are light to moderate rolling and static load demands.
4200 Resilient	HS	12lbs	99%	5-12	20-30min	1hr	Yes 1/16"x 1/32"x1/32" U- Notch	Ideal for heavy commercial spaces with heavy rolling load and static load demands.
4252 Multi-Use	PSA	N/A	99%	5-12	30-60min	6hr		Ideal for commercial environments with a need for quick installation excluding environments with heavy rolling or static loads.
MS Resilient	HS	N/A	N/A	N/A	10min	1hr		Ideal for applications subject to top-down moisture such as resident bathrooms, etc.

INSTALLATION

Layout

- Install using conventional tile and plank installation techniques.
- Carefully determine where to begin tile or plank installation.
- It is customary to center rooms and hallways, so borders are not less than half a tile or plank.

Installing Plank/Tiles

- Installing out of multiple boxes is recommended.
- Plank or tiles must be installed joint-tight and tension-free.
- Flooring should have a minimum of 6 – 8" seam stagger.
- Make sure cut edges are always against the wall.
- To properly cut the flooring, 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.
- 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.