

## Luxury Vinyl Tile & Plank Installation Guidelines

10.12.18

The purpose of this manual is to provide general installations recommendations based on certain installation environments. If there are other questions about a specific issue not covered in this manual, please contact © Swiff-Train Company, 10850 Train Ct. Houston, Texas 77041 or call 800.275.7943 (opt 2)

### Material Receiving & Storage

Upon receipt of material, immediately remove any wrapping and inspect for damage and verify that the correct product and color was received. Do not drop cartons as this may cause damage.

Adhesive, flooring and accessories, ambient air and subfloor must all be kept and stored at temperature continually 70°-80°F for not less than 48 hours before installing will begin through 48 hours after installing will be completed.

No labor claim will be honored on material installed with visual defects. Verify the material delivered is the correct style, color and free of any defects. Commencement of the installation of visually defective material by the flooring contractor will constitute the flooring contractor's acceptance of the materials and job site conditions. Any discrepancies must be reported immediately to Ground Control Surfaces technical department before beginning installation.

### Jobsite Conditions

Prior to beginning installing, the flooring contractor should visit the jobsite to confirm that permanent heating, ventilating and air conditioning (HVAC) system will be in continuous operation and capable of maintaining area temperature of 70°-80°F continuously from 48 hours before installation, during and through 48 hours after installing.

It should be determined that work by other trades will be completed prior to installation, or arrangements made for adequate and continuous protection of installed flooring if other trades will be working at same time or after.

### Subfloors and Underlayments

Flooring contractor should evaluate the suitability of existing surface to receive new flooring.

Surface may be conditionally acceptable with requirement for additional work and attention to include: patching, removal of surface paint, adhesive, other substances, etc., smoothing and leveling, addressing moisture and alkali concerns, etc. – to make the surface fully suitable to receive new flooring.

If for any reason there should be failure of underlayment (concrete, underlayment compound, wood or panel), such failure will be responsibility of underlayment applicator, manufacturer or supplier. Ground Control Surfaces accepts no responsibility for underlayment or sub-floor failures. Timely and thorough inspection and preparation of subfloor are first required actions to assure a satisfactory installation. No site work should commence until the flooring contractor is completely familiar with existing subfloor and related site conditions.

Unless there is written agreement to the contrary, commencement of installing by the flooring contractor will constitute flooring contractor's acceptance of subfloor and conditions.

### Slab Cure Versus Dryness

Concrete slabs are never completely dry and the moisture content of a slab is subject to change beyond the control of Ground Control Surfaces and the installation contractor. In cases where the slab develops a problem attributable to excess moisture content subsequent to installing of any Ground Control Surfaces product and sundry items, it is the obligation of the owner to remedy the problem.

Concrete must be fully cured, structurally sound, clean, free of dirt, dust, wax, grease, paint, polish, oil, adhesive residue, curing, hardening,

parting compounds, sealers and any material that would interfere with maximum adhesive bond.

### Recommended Trowel Sizes

For Luxury Vinyl Tile (LVT) and Luxury Vinyl Plank (LVP) use a 1/16" x 1/32" x 1/32" U-notch trowel. Spread rate will be approximately 220-260 sq ft per gallon. Also read Ground Control Surfaces Key A Major GCS 3500 Vinyl Flooring Adhesive Guidelines for further information.

### Substrate Conditions

Use on concrete substrates with up to 90% RH for flooring installed on or above grade (per current ASTM F2170), and pH of 8.0-10.0.

### Recommended Trowel Sizes

For LVT, LVP and Sheet Vinyl use a 1/16" x 1/32" x 1/32" U-notch trowel. Spread rate will be approximately 220-260 sq ft per gallon. Also see Ground Control Surfaces LVT/LVP Key A Major GCS 3500 Adhesive Installation Guidelines for further information.

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### Slab Construction:

Concrete slab must be in accordance with the American Concrete Institute (ACI) Publication 302.1 R-96 Guide for Concrete Floor Slab Construction for finish, cure and compressive strength of 3500 PSI.

### Porous Substrate

When installing vinyl plank and tile over a porous substrate, the adhesive should be allowed to dry to the touch sufficient to prevent slippage. Loss of adhesion can result if the flooring is not installed within the working time of the adhesive. Roll the installation in both directions with a 75-100 lbs. 3-section roller immediately after the installation is complete.

### Non-Porous Substrate

Install LVY and LVP flooring into adhesive as it becomes dry to the touch with little or no transfer to the finger when touched. This will normally require 30–60 minutes of drying time at the suggested installation temperature and humidity. Do not install flooring into wet adhesive on non-porous substrates. Roll the installation in both directions with a 75-100 lbs. 3-section roller immediately after flooring is placed, ensuring complete contact with adhesive.

### Dust, Dirt and Debris Removal

Broom sweep, vacuum and / or damp mop to make completely clean. Assure that the surface is completely dry prior to installation.

### Moisture and Alkalinity Testing

Moisture and alkalinity testing should be performed by an authorized testing service or properly trained entity, not necessarily the installation contractor. Regardless of who performs testing, all test results must be documented and be available to Ground Control Surfaces in case of a claim.

Perform testing according to ASTM F-1869, or according to ASTM F 2170 on all concrete slabs, regardless of age, grade level or history of flooring materials previously in place. Please reference the adhesive manufacturer for the moisture limits for the adhesive selected.

Slabs must be free of moisture (water vapor), hydrostatic pressure and alkali, and must remain so over time to assure integrity of installation.

Testing for presence of alkali must be performed on all concrete slabs regardless of age or history of flooring material previously in place. Alkalinity should not exceed reading of "9" when tested with pH paper and distilled water.

Moisture emission should be tested at all joints or stress cracks.

A drawing of the site to receive new flooring should be made and marked to show exact location where each moisture test has been made. The report of results at each test location should be attached to the drawing. A copy of the drawing and report should be maintained in project file available for submission to interested

parties (owner, architect, general contractor, construction manager).

Testing is meaningful only on the date and time performed. Anytime thereafter, change of conditions could create change in slab moisture to higher than acceptable. Neither Ground Control Surfaces nor a flooring contractor has control over, or responsibility for, such change of conditions subsequent to installation.

Many adhesives demonstrate different moisture tolerances. Moisture tolerances are specified by the manufacturer of the adhesive used. Please refer to the adhesive manufacture for moisture specification and tolerances.

### Expansion Joints

Expansion Joints must be permitted to extend through and be flush with the flooring surface, and never be covered over with flooring. Filling an expansion joint with material not specifically designed for that purpose or with floor smoothing underlayment can cause bond failure and surface distortion of new flooring.

Expansion joint covering systems can be purchased. Filling joints with patching or leveling compound will not correct moisture problems.

### Determining Slab Porosity

The flooring contractor must determine slab porosity to choose the preferred adhesives and procedures

- Ensure surface is dust free prior to performing the following test. Permit surface to dry completely before performing additional activities.
- Sprinkle water (sparingly) and do not flood surface. Water that soaks in indicates a porous surface. Water that forms beads indicates a non-porous surface.

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### Wood Subfloors

Must be dry, smooth, free of vertical movement, horizontal expansion; be structurally sound, clean, free of dirt, dust, wax, grease, paint, polish, oil, sealers and material that would interfere with maximum adhesive bond.

Wood subfloors must be double construction with a minimum thickness of 1". They must also not be in direct contact with the earth and be properly vented in all crawl spaces.

On or below grade slab, below suspended wood substrate that will have resilient flooring installed, must be dry and the area well ventilated to prevent entrapment and accumulation of moisture laden vapor emission and subsequent swelling of wood panels.

Where ground moisture may create conditions of high humidity in crawl space, polyethylene film must be placed over ground earth with length and width overlapped 12" to reduce and control moisture within the crawl space.

Moisture content should not exceed 12% when measured with a wood moisture test meter.

### Approved Underlayment Panel

Use only underlayment grade plywood bearing the stamp of the American Plywood Association, The Engineered Wood Association (APA) durability classification of "Exterior 1" with fully sanded face.

Double wood subfloors with top boards not wider than 3" require installing underlayment grade plywood, fully sanded, 1/4" minimum thickness.

Top boards wider than 4" can accept underlayment grade plywood as above, but 3/8" minimum thickness.

Install with face grain perpendicular to board joints. Cross-joints must be staggered maximum 16", fastened 6" on center throughout and 3" apart along all edges.

Single wood subfloors of tongue and groove planks must have a minimum thickness of 1" and must also be covered with approved underlayment grade plywood, 1/2" minimum thickness, with face grain perpendicular to board joints. Cross-joints must be staggered maximum 16", fastened 6" on center throughout and 3" apart along all edges.

Open wood joists may be covered with any structurally appropriate panel of 3/4" minimum thickness. In all cases, care must be taken to protect the subfloor from exposure to moisture vapor whether the structure is over concrete or a crawlspace. Such suspended flooring systems must have a layer of approved underlayment applied in conformance with APA guidelines.

Unacceptable Wood Subfloor Materials including, but not limited to particleboard, flake board, chipboard, and luan.

## Fasteners

Resin coated, rosin coated and cement coated nails, screws, staples, etc. should NOT be used to install plywood underlayment because they can cause discoloration of vinyl flooring.

Heads and top surfaces of all fastening devices must be below surface of plywood and covered with suitable, flexible underlayment patch or filler to height of plywood surface.

## Priming

Although NOT required, priming has proven to enhance adhesive qualities and provide a more uniform substrate. Use of primer will maintain relatively even open time of spread adhesive, help equalize adhesive absorption over entire surface and maximize adhesive yield. Determine spread rate of primer in accordance with manufacturer's guidelines and apply as directed.

## Existing Resilient Flooring

These surfaces may be suitable as substrates for Ground Control Surfaces products under the following conditions, with no guarantee or assurance by Ground Control Surfaces for successful and / or satisfactory results and with no liability to Ground Control Surfaces for unsuccessful and / or unsatisfactory results.

This material must be 1 single layer only, non-cushioned; multiple layers are unacceptable. Material must also be structurally sound, dry, clean, free of dirt, dust, wax, grease, paint, polish, oil, curing compounds, sealers and all other materials that would interfere with maximum adhesive bond between existing surface and new flooring.

This material should also be properly installed over an acceptable subfloor and must be uniformly and completely bonded to it.

A surface that is embossed, textured, irregular, uneven or with urethane coating, must be covered with high quality latex liquid / Portland cement underlayment or embossing leveler according to instructions of underlayment or embossing leveler manufacturer to minimize telegraphing.

When doubt exist about suitability of existing flooring, it should be removed.

## Removing Existing Resilient Flooring

After removing resilient flooring, all adhesive residues must be mechanically removed (scraped or sanded) completely and the substrate must be covered with high quality latex liquid / Portland cement underlayment according to instruction of manufacturer of product to be utilized.

Do not use solvent-based products to remove "old" adhesive when removing existing resilient flooring. Solvent-based products can, themselves, not always be completely removed from surface to receive new adhesive. Interaction of many adhesives with solvent based products that may remain on / under surface can cause unsatisfactory bond between substrate and new flooring.

## Asbestos

For many years asbestos was formulated into some resilient floorings and adhesives until federal law banned the use of asbestos in these products.

Wherever a new installation of resilient flooring is intended to be removed or placed over an existing resilient flooring material the presence of asbestos in the existing flooring should be investigated.

Removal of this flooring could cause asbestos to be released into the atmosphere and if inhaled could cause serious medical problems. **DO NOT SAND OR SCRAPE THESE MATERIALS.**

Installation of new material over existing material that may contain asbestos is always preferable if jobsite conditions make this possible. When removal of existing flooring cannot be avoided, all safety precautions and proper procedures must be followed.

These are detailed in the publication titled "Recommended Work Practices for the Removal of Resilient Floor Covering", available from the Resilient Floor Covering Institute, 401 E. Jefferson Street, Suite #102, Rockville, MD 20850.

Also check state and local laws regarding the removal of asbestos-containing material.

## Ceramic, Quarry, Slate and Marble Surfaces

These surfaces may be suitable as substrates for Ground Control Surfaces under the same conditions and limitations as in the section above, with no guarantee or assurance by Ground Control Surfaces for successful and / or satisfactory results and with no liability to Ground Control Surfaces for unsuccessful and / or unsatisfactory results.

**Following these steps may achieve the best results.**

- Surfaces must be machine sanded with a 3-1/2 grain size pad or with use of a terrazzo sanding machine.
- Grouted ceramic tile must be stripped and leveled with a Portland base, self-leveling compound.

- Surfaces must be considered non-porous.
- Surface must be purged (stripped) of all wax, polish, grease, dirt, paint and all other coatings that would inhibit maximum adhesive bond between existing surface and new flooring.

Adhesive bond tests must be performed between components and results must be satisfactory.

## Double Stick Installation

After the Ground Control Surfaces Rhythms or Sound Check® underlayment is firmly installed on the sub straight you may commence the installation of the finished flooring.

Follow the Ground Control Surfaces® technical data document titled Ground Control Surfaces® Rubber Key G Major GCS 2500 Rubber Flooring Adhesive Guidelines in conjunction with this manual for the complete instructions before beginning. When installing using the double stick method, install the vinyl planks or tiles perpendicular to the seams of the Ground Control Surfaces Rhythms or Sound Check® underlayment.

Adhere all other vinyl sheet, plank or tile material directly to Ground Control Surfaces Rhythms or Sound Check® using Ground Control Surfaces GCS 2500 Key G Major® adhesive, depending on the application or if being used with another manufacturer's finished flooring. Follow instructions on the adhesive pail and or those available from the adhesive manufacturer.

If another manufacturer's finished flooring is being used with Ground Control Surfaces Sound Control or Rhythms®, follow the installation instructions given by that manufacturer.

## Steel, Stainless Steel and Aluminum

These surfaces may be suitable as substrates for Ground Control Surfaces under the following conditions with no guarantee or assurance by Ground Control Surfaces for successful and / or satisfactory results and with no liability to Ground Control Surfaces for unsuccessful and / or unsatisfactory results:

Achieve best results by applying self-leveling underlayment per manufacturers.

Ensure that the substrate has no surface rust or contaminants and is abraded to provide a suitable bonding surface.

### **Plank and Tile on Walls**

Most vertical surfaces may be suitable as substrates for Ground Control Surfaces products under the following conditions with no guarantee or assurance by Ground Control Surfaces for successful and / or satisfactory results and with no liability to Ground Control Surfaces for unsuccessful and / or unsatisfactory results.

Apply to structurally sound, solid, adhesive receptive surfaces with a non-staining contact adhesive.

Check with local fire codes as to suitability and restrictions.

### **Clean Up**

Use a clean wet cloth to clean up adhesive while still wet. Dried adhesive may require the use of an appropriate solvent.

### **Traffic**

Follow Ground Control Surfaces guidelines; otherwise restrict foot traffic for 24 hours after installation. No heavy traffic, rolling loads, or furniture placement for 72 hours after installation. Additional time may be necessary if the installation is over a non-porous substrate. Allow at least five days following the installation before conducting wet cleaning procedures or initial maintenance.

### **Disclaimer**

Users should determine the suitability of this information or product for their own particular purpose or application. Manufacturer is not responsible for the misuse of this product. This Technical Data sheet and the information conveyed herein supersede all previous versions.