

## HFLOR Dryback LVF Installation & Maintenance Guidelines

### **Pertains LX Hausys collections of:**

CraftedConnections, Pike's Peak, Savana, ForestFusion, PRESTG, and PRESTG Artistry

### **1. INTRODUCTION**

Floorcoverings designed and produced by LX Hausys America, Inc. as Pike's Peak, Savana, Forest Fusion, PRESTG, PRESTG Artistry collections, are interior Luxury Vinyl Flooring (LVF) products for direct-glue applications only on suitable existing or new subfloors. Before installing, ensure that the installation site meets all applicable standards and always comply with recommendations of the building industry and local regulations.

#### **Selection of Flooring**

Several factors must be considered when specifying resilient flooring. A proper evaluation of site conditions, level of commercial traffic, and other external factors should be considered. Design and pattern, product durability, substrates and site conditions are all basic parts in the specification process that must be considered. Installation inspection such as quantity, color, design, etc. must be checked and confirmed prior to installation. Be sure to use identical LOT numbers if required.

#### **IMPORTANT!**

HFLOR Dryback LVF should not be used for exterior applications, golf shops, locker rooms, depicted wet areas, food processing facilities, or commercial kitchens.

### **2. PRIOR TO INSTALLATION**

#### **Storage**

HFLOR Dryback LVF must be stored in a dry, wellventilated, flat surface and evenly stacked on top of one another and not on edge. Store indoors with temperatures maintained between 55° F / 18° C - 100° F / 37° C and the relative humidity should be controlled and maintained between 30-70%.

#### **Inspection**

Despite the care and rigor during production, a visual inspection of the materials before installation is recommended, such as, batch number, color, design, or possible defects. If any visual faults are detected on materials, do not install the faulty products and contact your local dealer to obtain information concerning the next step. LX Hausys America, Inc. recommends installing products with the same batch/lot number only in the same area. Quality is not guaranteed for color/shade differences in different lot construction.

#### **Acclimation**

Acclimate the flooring for a minimum of 48 hrs. before installing at the project site with room temperatures between 65°-85°F or 18°-29°C with indoor relative humidity to be at 30%-65%. Similar temperature and acclimating duration times are also likely required for selected adhesives as well. The permanent HVAC system must be operational and functional 48 hrs. before, during and after installation. Portable heaters are not recommended, as they may not heat the room and subfloor sufficiently and consistently.

### **3. SUITABLE SUBFLOORS**

All substrates must be properly prepared and tested in accordance with the recommended flooring industry guidelines prior to any flooring installation. Subfloor analysis is under installer responsibility. LX Hausys America, Inc. cannot be considered as responsible for damage of floorcovering due to not having a suitable subfloor.

### **The following are approved substrates considered suitable for the installation of direct-glue resilient flooring products:**

- Above-grade, on-grade, or below-grade concrete without hydrostatic pressure, excess moisture or alkalinity
- Above-grade, on-grade, or below-grade lightweight concrete, properly prepared and without hydrostatic pressure, excess moisture or alkalinity
- Above-grade or on-grade Gypsum concrete surfaces, properly prepared, sealed, and without hydrostatic pressure, excess moisture or alkalinity
- Plywood underlayment exposure grades for areas to be covered with resilient flooring:
  - Underlayment
  - Underlayment A-C, B-C, C-C Plugged, or C-C Plugged exterior when marked "sanded face"
  - Marine Exterior
  - Sanded Plywood Grade A-C, B-C, A-D, or B-D marked "Plugged Crossbands Under Face",
  - "Plugged Crossbands (or Core), Plugged Inner Piles, or "Meets Underlayment Requirements"
- APA-Trademarked plywood is rated as suitable for installation of resilient flooring.
  - Durability Classification: Exterior, Exposure 1
  - Fully sanded face
- Poplar and Artic Birch Plywood not manufactured in the United States.
  - Both must have fully sanded face and exterior rating.
- Wood subfloors must be clean, dry (14% maximum moisture content), structurally sound, in compliance with local building codes, shall be flat to within 3/16" in 10' feet, double layered with a minimum 1" inch total thickness and with at least 18" well ventilated air space beneath.
- Fiber Reinforced Gypsum Underlayment, Fiber Cement Board and Cementitious Backer Board products must be designed specifically for vinyl floorcoverings.
- Properly prepared and well-bonded existing resilient floorcovering (single layer only)
- Properly prepared well bonded Terrazzo, Epoxy, Polymeric, ceramic tile, or marble – (understand adhesive requirements for proper surface preparation)
- Certain metal floors – (understand adhesive requirements, limitations and needed preparation)
- Minimum temperature of the substrate must be 60° F / 15.6° C.
- Substrate temperature should be a minimum of 5°F higher than Dew Point.
- Radiant heated floors where heat does not exceed 85°F / 29° C.

### **The following are not approved substrates for the installation of directglue resilient flooring products:**

- Existing adhesive residue
- Rubber, cork or asphalt tiles
- Textured or cushion backed resilient flooring
- "Sleeper" floor systems
- Plywood floors installed directly over a concrete slab
- OSB, particle or chipboard, CCA (pressure treated), oil treated, or other coated plywood. (These substrates will require an additional layer of ¼" minimum resilient flooring rated underlayment to be considered as an approved substrate)
- CDX or other plywood with knots or open defects
- Underlayment made of pine or other soft woods
- Masonite™ or other hardboard underlayment
- Hardwood flooring
- Carpet
- Paint, wax, oil, grease, residual adhesive, mold, mildew, and other foreign materials that might prevent adhesive bond
- Any uneven or unstable substrates

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### WARNING!

DO NOT SAND, DRY SWEEP, BEAD-BLAST, SHOT-BLAST OR USE ANY OTHER MECHANICAL MEANS TO PULVERIZE EXISTING TILE FLOORING, BACKING, LINING FELT, ASPHALTIC "CUTBACK," OR ANY OTHER ADHESIVES. THESE PRODUCTS MAY CONTAIN 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.

Never use solvents or citrus adhesive removers to remove old adhesive residue. Residue left within the subfloor will affect the new adhesive and the new floorcovering.

### Radiant Heat Systems

- Radiant heated floors where heat does not exceed 85°F / 29°C.
  - Contact the Manufacturer of your radiant heating system to ensure that the system is compatible with vinyl flooring and for specific recommendations.
  - Installation directly over electric heat mat system is not approved.
  - Unless otherwise recommended:
    - The heating system components must have a minimum of ½" / 13 mm separation from the flooring product.
    - Radiant heat systems must be turned on and in operation for several days before flooring installation to calibrate temperature settings and to reduce residual moisture within the concrete.
    - The system must be turned down to 65°F / 18°C seventy-two hours prior to and during the flooring installation.
    - Twenty-four hours after installation, slowly bring heating system up back up to normal operating temperature in increments of 5° F / -15° C maximum per day to avoid over heating.
    - Floor should never be heated over 85°F / 30°C.
- Note: Rugs placed over radiant heat systems can increase the system's surface temperature.

### 1. Concrete Subfloors

- Shall be in accordance with the latest version of ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
- All surface patching and leveling is to be in accordance with the latest version of ASTM F2678 Standard Practice for Preparing Panel Underlayments, Thick Poured Gypsum Concrete Underlayments, Thick Poured Lightweight Cellular Concrete Underlayments, and Concrete Subfloors with Underlayment Patching Compounds to Receive Resilient Flooring.
- To prevent moisture problems, concrete slab construction shall be in accordance to industry standards for specification related to concrete mix design, curing methods and drying times.
- On-grade and below-grade slabs should be installed with a suitable vapor retarder directly underneath the concrete slab.
- New concrete shall be properly cured and dried prior to the installation of floorcovering. Curing agents, surface hardeners, and other membranes or compounds shall be mechanically removed immediately after initial cure to allow the slab to properly dry prior to flooring installation. (Standard cure time is approximately 30-days per 1" of slab thickness)
- To ensure manufacturer warranty, all concrete substrates, regardless of grade or age of slab, must be properly tested using one or more of the methods outlined below:
  - Acceptable test method is ASTM F 2170 In Situ Relative Humidity. Testing shall be conducted according to the test method and instructions of the manufacturer of the testing equipment standards – maximum 80% RH.

- Anhydrous Calcium Chloride per (ASTM F1869) standards - maximum 5 lbs./1000 ft2 MVER.
- Non-destructive CMM electronic meter method per (ASTM F2659) standards for moisture content equivalent showing a maximum of 5% or less with a standard minimum of 8 tests to be performed. Note: CMM moisture test method is an alternative method for qualifying moisture levels for residential installations only.
- Concrete Alkalinity / pH Test shall be performed when the test site is at the same temperature and humidity expected during normal use; or at a temperature of 65°-85°F or 18°-29°C and 30 % - 65% humidity for minimum 48-hours prior to testing. Using distilled water, place drops of water to form a small puddle approximately 1-inch diameter. Wait 60-seconds, and then dip a portion of the pH paper into the water. Acceptable concrete pH level is within the ranges of 5-10 as compared to the color chart provided within the pH test kit. Note: Light sanding and/or rinsing the substrate with damp mop with clean water may help lower alkalinity levels.
- Concrete Surface Porosity Test shall be conducted prior to the application of adhesive to evaluate bonding capacity.

### Concrete Slab Preparation

- Concrete slabs shall be well-cleaned prior to the installing any floorcoverings.
- Remove all sealers, curing agents and compounds, grease, oil, adhesive removers, existing adhesive residue, dirt, paint, etc. to ensure a clean bond surface for the adhesives.
- Concrete floors shall be smooth and flat to prevent irregularities, roughness or other defects from telegraphing through the new resilient flooring.
  - The surface of the slab shall be flat to within 3/16 inch in 10 feet.
  - Slopes shall be less than 1 inch in 6 feet.
  - Uneven areas should be mechanically ground to smoothness.
  - Cracks, depressions or other similar irregularities should be leveled using a suitable portland cement-based patching compound (always follow the patch manufacturer's instructions regarding mixing and applications.)
- Overly porous, dusty, flaky or soft concrete surfaces are not suitable for resilient floorcoverings. It may be necessary to mechanically remove the top layer concrete in such cases and/or these surfaces may need to be primed and covered with a cementbased underlayment compound. (Follow the patching or leveling compound manufacturer's instructions regarding preparation of the concrete surface, priming, mixing of the product, thickness of application and drying time for resilient floorcovering installation.)
- Expansion joints, isolation joints or other moving joints in the concrete slab must be honored and shall not be filled with patching compound or covered over with resilient flooring. Expansion joint covers designed for use with resilient flooring should be used. Control joints (saw cuts) may be patched and covered with resilient flooring once the concrete is thoroughly cured dry and acclimated.

### 2. Gypsum or Lightweight Cellular Concrete Substrates

Gypsum or lightweight concrete subfloors or substrates shall have a minimum compressive strength of 2000 psi and/or a dry density of 90 lbs. per cubic foot or greater and be properly prepared in accordance with appropriate ASTM specifications.

- Unprimed gypsum surfaces often have a dusty surface and an open, porous surface, which will lead to an adhesion bond failure, if not properly sealed and treated. It is the responsibility of the installation contractor to obtain written verification from the general contractor, architect, owner, or responsible party that the gypsum was properly sealed with the gypsum manufacturer's recommended sealer. If this data is not available, conduct testing in accordance with the appropriate ASTM Test Method for Gypsum Surfaces.

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- Conduct a Surface Porosity Test to ensure that the surface is properly sealed. If the water is quickly absorbed, do not proceed with installation before contacting the manufacturer’s technical services for assistance.
- Check moisture content of the gypsum substrate, via the appropriate method according to the ASTM Standards listed above. Moisture content of the subfloor/substrate shall not exceed the adhesive requirements or 80% RH.
- All patching compounds shall be suitable for use with gypsum, or lightweight cellular concrete surfaces as outlined by the patching compound manufacturer. (Follow the manufacturer’s instructions regarding mixing, use, and application)

### 4. JOB SITE CONDITIONS

- It is recommended that resilient floorcovering installations shall not begin until other trades are completed.
- Areas to receive flooring shall be fully enclosed, weather tight with the permanent HVAC set at uniform temperature range of 65° - 85° F, 18° - 29° C and maintained following the installation.
- Areas to receive flooring should be adequately lighted during all phases of the installation process.
- Floors shall be smooth, permanently dry, clean and free of all foreign materials such as dust, solvents, grease, oils, paints, wax, polish and old adhesive residue.

Note: Conducting an adhesive bond test, moisture test and pH test prior to having a controlled environment may give false results. Dramatic changes may occur once a controlled environment is established.

### 5. INSTALLATION

For HFLOR collections of CraftedConnections, Pike’s Peak, Savana, Forest Fusion, PRESTG, PRESTG Artistry Dryback LVF installed direct glue down; installers must follow the regional requirements.

#### Step 1: Square the Room

The correct starting point for setting out a tiled floor is traditionally the center of the area - although this may not be the final starting point when tile laying begins. Some adjustment of the starting point may be required, for example, to avoid small perimeter cuts. In corridors and small spaces, it may be simpler to work lengthwise from one end, using the centerline as a guide.

To square the layout of the room, find the center of one end of the room. Locate the same point at the other end-wall. Snap a chalk line between these points to mark the centerline on the floor. Then, measure along this centerline to find the middle of the room. At the center point, mark off a line across the room at precise right to the first line. This can be achieved by using the 3-4-5 triangle method. A laser square can also be used for accurate layouts.

Starting from the center point, make a mark measuring 4 feet vertically and 3 feet horizontally. Connect the marks with a diagonal line to complete the triangle. If the diagonal line does not measure exactly 5 feet, then the center crossing lines are not at a true right angle.

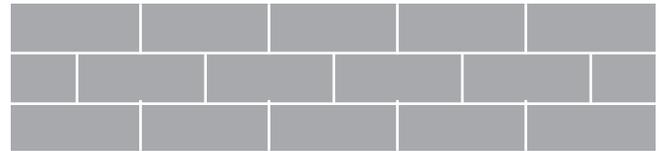
#### Step 2: Install the Tiles

Begin laying tiles at the starting point, ensuring that the tile is installed exactly along the layout lines. If the first few tiles are not installed accurately, the entire installation will be affected. Spread the appropriate adhesive on the centerlines. Start laying the tiles from the right angle formed by the centerlines. Lay the material from the center of the room, working towards the walls as shown. It is

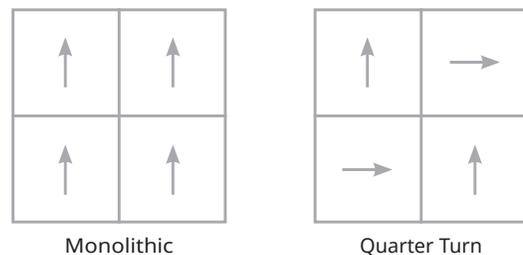
imperative that the first row is placed precisely and accurately against the reference line as you install. Make sure each tile is flush against the chalk line and tight against the adjoining tile. The ends of the tiles should align perfectly. Lay row-by-row or in pyramid fashion.

TIP: Pay special attention to the edges of the tiles. Do not slide the tiles through the adhesive as you install.

Recommend rectangle tile dimension is to be installed all one direction (monolithic) with a ½ width off set (Running Bond) pattern.



Recommended square tile dimension, install all one-direction (monolithic) with a square grid pattern or an optional quarter turn square grid pattern.



#### Plank Installation

Note: Plank install is performed primarily in the same manner as the tile install listed above with the exception of the starting point. Plank install is typically performed with the starting point at the longest straight wall of the installation area. Ensure the first run of planks is started in a straight line against the wall by using a chalk line or laser. Cut-to-fit planks to back fill against the wall if necessary. Plank stagger should maintain an overlap of 6” - 8” minimum between the end-joints of the previous row.

Unless a specific visual layout or pattern is explicitly specified in the project documentation, all planks must be installed with directional arrows oriented uniformly in one direction. To achieve a natural and aesthetically pleasing appearance, use a randomized installation pattern. Avoid repetitive configurations such as stair-step and H-patterns, which can detract from the visual quality of the finished floor.

#### IMPORTANT

- When installing products you should mix tile/planks from several cartons to blend minor shade variations.
- All HFLOR glue down LVT/LVP flooring must be rolled with a minimum 100 lb. steel roller both directions shortly after placing material into fresh adhesive bed. Areas that cannot be rolled with the large roller e.g. abutments such as door frames or skirting boards should be rolled with a hand roller or pressed into the adhesive with a rubbing hammer.

#### Step 3: Finishing the Install

Make sure to dry fit all perimeter pieces before spreading adhesive bed. Unless net fit is required, allow for a minimum of 1/8 expansion gap between the edge of the flooring material and the vertical surfaces.

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Draw centerlines across the installation site so that the entire site is divided into Quadrants. Then determine which of the four areas to begin with and begin placing products from the center.

### Adhesive Information

LX Hausys America, Inc. recommends usage of respectful adhesives for health and safety rules for workers and which are eco-friendly. Solvent-based adhesives are prohibited. Using these adhesives can have negative effects on the floorcovering. LX Hausys America, Inc. cannot be considered as responsible for damage on floorcovering due to unsuitable adhesive use. LX Hausys America, Inc. recommends usage of acrylic adhesive.

Please contact LX Hausys America, Inc. Technical Department at [flooringtech@lxhausys.com](mailto:flooringtech@lxhausys.com) to obtain information about suitable or recommended adhesives.

Note: Unless adhesive manufactures state otherwise due to specified wet-set application or possible non-porous substrate criteria, install floorcovering into semi-wet adhesive only (**Permanent bond**). An 80% or greater adhesive ridge transfer upon the back of material is optimal after rolling material. Adhesive coverage rate, flash time, working time and cure time may vary according to **jobsite temperature, humidity, and substrate porosity**. LX Hausys America, Inc. recommends after any substrate preparations, a bond test to be conducted before beginning the installation. A bond test is a mock-up to ensure whether the adhesive will bond satisfactorily to the substrate and attached floorcovering.

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### 6. ACCESSORIES AND FINISHING

LX Hausys America, Inc. recommends protecting the new flooring from heavy traffic for 24 hours minimum to have proper stabilization time. Light foot traffic is allowed.

The LVT products need to be protected for long periods of direct sunlight exposure. Windows and Glass doors need to be covered properly to protect the nearby floorcoverings. Maintain controlled ambient temperature and humidity within the installed area.

Allow at least 5 days following the installation before conducting wet cleaning procedures on the new flooring.

### 7. CARE & MAINTENANCE

#### Regular Maintenance

- Vacuum (without beater bar) and/or sweep often to prevent dirt build up or scratches.
- Wash the floor with non-abrasive neutral PH cleaning solution according to the water dilution ratio if needed as recommended by the cleaning liquid manufacturer.
- Damp mop the floor with a micro fiber pad or clean string mop/sponge.
- Additional cleaning and rinsing may be necessary for hard to clean or stubborn areas.
- Avoid spills of paints, dyes, harsh chemicals, acid products, etc.
- Promptly remove any spills, standing water, pet urine or other liquids.
- Use a melamine pad to remove stubborn scuffs.
- Do not use top coats or wax to maintain the floor.

#### Use of Floor Care Chemicals

- The improper use of cleaning chemicals may cause damage and/or discoloration. Overuse or inadequate rinsing of cleaning chemicals may compromise the performance of the floor.
- Abrasive powders or cleansers should not be used. Do NOT use highly alkaline products (ammonia, soda) bleach or strong solvents such as acetone as they can be harmful to both people and to your floor.

#### Protection

- Protect installed flooring until the project is complete.
- Use temporary hard board covering over the flooring for rolling of furniture or moving appliances.
- Furniture, fixtures, equipment, appliances, and any other items contacting the floor should use footing, castor, glide or fitting designed for resilient floors, with at least a 1" flat surface area.
- Wheels supporting rolling loads should be flat, not convex, with at least 1" flat surface area.
- The use of non-staining walk-off mats at areas of building's exterior doorways will greatly enhance the appearance of a floor by reducing the amount of soil, dirt, sand, salt, grit, and other abrasive or soiling substances.