

Commercial Resilient Installation

1. GENERAL INFORMATION

The path to a successful and trouble-free installation is through proper jobsite preparation. That begins by performing a thorough on-site evaluation (including jobsite testing), ensuring that subfloor preparations are finished and having all deficiencies satisfactorily addressed. Site conditions must comply with the information provided within this document and with the applicable requirements in the current versions of:

- ❖ ASTM F710 “How to Prepare Concrete Substrates to Receive Resilient Flooring”
- ❖ ASTM F1482 “Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring”
- ❖ ASTM F3191 “Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive Resilient Flooring”
- ❖ ASTM F3311 “Standard Practice for Mat Bond Evaluation of Performance and Compatibility for Resilient Flooring System Components Prior to Installation”
- ❖ ACI 302.1 “Guide to Concrete Floor and Slab Construction”
- ❖ ACI302.2 “Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials”
- ❖ Relevant local, state, and national building codes and regulations.

LEKTRAFLOOR™ Commercial Dryback LVT/LVP products are 2.5mm thick with square edge and can be installed without transition when adjoining to products of a similar thickness.

LEKTRAFLOOR™ flooring is intended for interior use only in climate-controlled areas and is suitable for above- grade, on-grade, and below-grade applications.

LEKTRAFLOOR™ flooring is recommended for use over properly prepared concrete in the absence of hydrostatic pressure or excessive moisture, double layer suspended wood, and contractor approved existing single layer, fully bonded non cushioned vinyl (tile or sheet) and ceramic tile.

2. LIMITATIONS

LEKTRAFLOOR™ flooring products are not recommended in the following areas or conditions. For each condition, suggested methods are provided to help minimize or mitigate the concern.

- ❖ **Stiletto Heels, Cleats & Spikes Footwear** - Protect from exposure to stiletto heels, cleats, spiked or other footwear that will cause damage. These conditions should be avoided. Protect flooring with a suitable walkway matting system.

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- ❖ **Staining Agents** - Protect from exposure to conditions known to cause staining. Common examples include flooring in close proximity to newly applied asphalt in driveways or parking lots, antioxidants in certain types of rubber products including rubber mats or rubber backed mats, rubber wheels and tires.
- ❖ **Excessive Heat** - Protect from exposure to items that can melt or burn the flooring.
- ❖ **Forklifts & Pallet Jacks** - Protect from areas where forklifts and pallet jacks are frequently used or utilized aggressively that can result in surface damage. Protect from frequent or aggressive pallet jack use or from jagged or sharp edges, splinters or nails protruding from pallets or objects transported by a pallet jack, hand truck or other conveyance that may cause damage or injury.
- ❖ **Solvents & Chemicals** - Protect from excess exposure alcohols, ketones or other solvents which may cause damage to the flooring or injury.
- ❖ **Floor Protection** - Protect flooring from furniture, chairs, and equipment with insufficient, inadequately designed, or deficient floor protection devices used. All equipment, furniture and chairs need to be selected with proper hard surface floor protective glides and casters to prevent indentation, scratching, gouging, delamination, or other damage. Use industrial grade felt floor glides and soft urethane or composite tread (Shore A 70-90 Hardness) casters. Do not use plastic, rubber or metal glides or casters as they can damage the floor.
- ❖ **Topical Moisture & Floor Drains** - Protect flooring from excessive or prolonged exposure to topical water and dampness during use or maintenance. For areas that will have exposure to topical moisture like exterior doorways, bathrooms or areas near a floor drain, the use of epoxy, urethane or modified silane adhesives that are waterproof when cured are recommended.
- ❖ **Walk-Off Mats** - It is the facility's responsibility to maintain proper walk-off mats at all entrances and interior areas with potential moisture or soiling exposure (kitchens, wash areas, water closets, etc.). Walk-off mats capture and hold soil and moisture and prevent it from being tracked throughout the building.
- ❖ **Markers, Paint & Tape** - Protect flooring and subfloor from markers, pens, construction crayons, etc. paint and/or tape. These items may bleed through and stain the flooring or cause damage. Use pencils for all marking or sand off any markings, tape, or paint as part of surface preparation before installation. Refer to marker, tape and paint products manufacturer for recommended use and proper protection for their products.
- ❖ **Cleaning Chemicals, Equipment & Use** - Always properly dilute cleaners and use appropriate maintenance chemicals and equipment as recommended by the manufacturer and in accordance with the manufacturers' current instructions.

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- **DO NOT** mix cleaning products together,
- **DO NOT** use cleaners containing pine oil.
- **DO NOT** use phenolic or enzyme-based cleaners unless neutralized and rinsed with clean water immediately after each use.

3. RECEIVING, STORAGE & HANDLING

Carefully inspect all materials upon receipt and confirm there is no freight damage. Check all materials received and confirm that you have received what was ordered. Be sure to check the COLOR, QUANTITY & SIZE and DYE LOTS for each color.

CAUTION - It is your responsibility to report any freight damage on the bill of lading with the freight carrier at the time of delivery.

Store resilient flooring products in a watertight area between 50°F (10°C) and 90°F (32°C). The storage area should be away from exterior doors and windows and should be maintained as close to normal room temperature as possible. Do not use outside or portable temporary storage containers.

Store flooring cartons flat and stacked on pallets or racks squarely on top of one another. All pallets or shelves need to have a flat, fully supported base without spaces between slats or gaps and not directly on wire shelving. If not, the cartons should be stacked on to a 1/4" or thicker smooth face plywood base directly on top of the pallet or shelf.

4. JOBSITE REQUIREMENTS

- ❖ **HVAC** - The permanent HVAC system or temporary HVAC system must be functional, in continuous operation 24/7 and maintaining a minimum of 65°F (20°C) and a maximum of 85°F (29°C) in the air and on the subfloor surface, for a minimum of 7 days before and during installation or moisture testing, and for 7 days after installation. In addition, the HVAC system in use at the time of installation and testing must maintain the air Relative Humidity (RH) at the anticipated occupancy level or between 35% RH and 55% RH during these times. One week after the installation is complete the air and surface temperature should not go below 55°F (13°C) or exceed 85°F (29°C).
- ❖ **Temporary HVAC** - Must include data logging with readings each hour or more frequently detailing the air temperature and air RH. In addition, the subfloor surface temperature must be checked at least once daily before beginning the installation that day within 2 ft. of all exterior walls every 30 feet and recorded with measurement locations depicted on a floorplan. Only proceed with the installation if all conditions are within specification.

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- ❖ **Floor Flatness** - Use a 10 ft. & 1 ft. straightedge to check the surface flatness. The surface shall be flat to 3/16 inch in 10 ft. (3.9mm in 3m) and 1/32 inch in 12 inches (0.8 mm in 305 mm). When using a 10 ft. straight edge is not practical, a 6 ft. straightedge shall be used. When using a 6 ft. & 1 ft. straightedge, the surface shall be flat to 1/8 inch in 6 ft. (3.2mm in 1.8m) and 1/32 inch in 12 inches (0.8 mm in 305 mm). Level any high spots by sanding, grinding, etc. and fill and smooth low spots with an appropriate surface preparation material. Rework as needed to prevent irregularities or roughness from telegraphing through the new flooring.
- ❖ **F-Number System** - Values of FF 36/ FL 20 are generally acceptable for concrete floor slabs to receive resilient floor coverings depending on intended use.
- ❖ **Wood Subfloor** - Wood subfloors shall be flat, smooth, dry, structurally sound. They shall be clean and free of all foreign material such as dust, wax, solvents, paint, grease, oils, old adhesive residue, adhesive removers, mold, mildew, and other foreign material that might prevent adhesion of the resilient flooring or cause a discoloration of the flooring from below.
- ❖ **Subfloor Panels** - Use APA or other suitable manufacturer rated and approved subfloor panel that is designed and intended for the design load and joist spacing. Use a double-layer construction with 1-inch minimum total thickness (to include a ¼ in. underlayment grade rated panel for resilient flooring), with at least 18" well-ventilated air space beneath. DO NOT install over sleeper construction subfloors or wood subfloors applied directly over concrete. Fire-retardant or preservative treated plywood, particleboard, chipboard, flakeboard, Oriented Strand Board (OSB), hardboard or similar are not recommended to bond to. These subfloors require adding a suitable ¼" or thicker underlayment grade panel over the existing subfloor.
- ❖ **Wood Flooring** - Due to potential expansion and contraction, cupping and buckling of individual boards during seasonal changes, a 1/4 " or thicker underlayment grade panel must be installed over existing wood flooring.
- ❖ **Wood Moisture Testing** - Readings between the wood framing, subfloor panels and underlayment panels should be within 3% and be less than 14% moisture content when checked with a calibrated pin moisture meter.

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- ❖ **Concrete Floor Slabs** - The surface of concrete floors to receive resilient flooring shall be dry, clean, smooth, and structurally sound. They shall be clean and free of dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive removers, film-forming curing compounds, silicate penetrating curing compounds, sealing, hardening, or parting compounds, alkaline salts, excessive carbonation or laitance, mold, mildew, and other foreign materials that might affect the rate of moisture dissipation from the concrete, the adhesion of resilient flooring to the concrete or cause a discoloration of the flooring from below (ASTM F710).
- ❖ **Lightweight Concrete** - Lightweight aggregate concretes having dry densities greater than 90 lbs. per cubic foot are generally acceptable under resilient flooring. Concrete slabs with heavy static and/or dynamic loads should be designed with higher strengths and densities to support such loads.
- ❖ **Concrete Curing** - Wet curing for 7 days is the preferred method for curing new concrete. The use of curing compounds can have unintended consequences.
- ❖ **Concrete Curing Compounds** - Concrete curing compounds are not recommended. Curing compounds can interfere with the bond of the floor patching materials and adhesive to the concrete. Seek assistance from the adhesive or surface preparation manufacturer to determine if curing agents are present and how to mitigate when used. When Film Forming Curing Compounds are used, completely remove the curing compounds by sanding 28 days after placement, so the concrete floor slab can begin drying.
- ❖ **Moisture Vapor Retarder** - Confirm that all concrete floor slabs on or below grade to receive resilient flooring have a permanent, effective moisture vapor retarder with a minimum 10 mil thickness and permeance of 0.1y (ASTM E1745) properly installed directly below the slab. When these conditions do not exist or when conditions cannot be verified, it is recommended to apply a moisture mitigation system prior to the installation of resilient flooring.
- ❖ **Concrete Surface Preparation** - Use cementitious or calcium aluminate patching and leveling compounds in accordance with the manufacturer's instructions with a 3,000 psi or greater compressive strength based on project requirements. Use products that are mold and mildew resistant. For cracks or saw cuts deeper than 1/2", use a 2-part epoxy or urethane crack filling material or similar that will prevent moisture flowing through the crack and provide a smooth surface. After patching, sand the surface to remove all ridges and rework any remaining low spots or surface defects to provide a smooth stable bonding surface. Vacuum the entire surface paying close attention to the perimeter to remove all dust and debris.
- ❖ **Prime Porous/Dusty Slabs** - Porous and/or dusty structurally sound concrete substrates shall be primed prior to installation. Apply a properly prepared and appropriate primer-sealer in accordance with the manufacturer's instructions.

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- ❖ **Concrete Moisture Testing** - All resilient flooring projects installed with a moisture sensitive adhesive over concrete must have proper moisture testing performed to determine the suitability of the current slab conditions. Moisture testing shall be performed after the final prepared stage of the slab before the installation of smoothing or leveling compounds or before starting the flooring installation and results documented. This can include the use of the mat test or electronic moisture meters to survey the jobsite.

Concrete moisture testing shall include ASTM F2170 RH (Relative Humidity) testing and ASTM F1869 MVER (Moisture Vapor Emission Rate) testing. Moisture testing shall be completed in accordance with current guidelines at the time of testing without exception to be valid. The concrete moisture readings must show acceptable results for the adhesive selected prior to installation.

CAUTION - Moisture tests only provide an indicator of the current moisture conditions at the time of testing and do not predict future conditions or preclude the possibility of moisture related issues in the future.

- ❖ **Concrete Moisture Mitigation** - When moisture readings exceed the RH and/or MVER limits of the adhesive system, there are two options to address this condition. **LEKTRAFLOOR™** does not warrant any product or procedure for remediation of high moisture content.
 - Use a dehumidification system to accelerate the moisture dissipation from the slab. This process will require monitoring and retesting until acceptable slab moisture levels are reached.
 - Apply a moisture mitigation system. This option can be faster, but more expensive. Refer to ASTM F3010 "Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings" for guidance.
- ❖ **Concrete Moving Joints** - Moving joints (expansion, isolation, and other moving joints) are built into concrete floor slabs to allow for movement without developing random cracks. All moving joints must be honored and not patched and installed over. Expansion joint covering systems should be detailed by the architect or engineer based on intended usage and aesthetic considerations.
- ❖ **Chemical Abatement** - The use of solvent adhesive removers (inorganic or bio-based) or chemically abating an existing floor covering or adhesive IS NOT RECOMMENDED. Adhesive removers can remain in the slab, under walls and within cracks and cause failure of the new floor covering, surface preparation materials and or adhesive after installation. For removal of all flooring and adhesives, follow the resilient flooring removal procedure as detailed in the RFCI's Recommended Workplace Practices for Removal of Resilient Floor Coverings without the use of solvents.

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- ❖ **Existing Flooring** - Existing Flooring must be on grade or above grade (not below grade). Existing resilient flooring may include single layered, non-cushion backed, fully adhered VCT, Sheet Vinyl or LVT, with no indication of moisture or alkalinity issues. Existing quarry tile, terrazzo, ceramic tile or poured floors (epoxy, polymeric, seamless) must be fully cured and well bonded to concrete slab, free of solvents, wax or polish, oil or petroleum derivatives, grease, grime, or any other surface contaminant with no indication of moisture or alkalinity issues. Remove all wax or polish and clean the surface. Repair or patch any damage, loose or missing areas or other irregularities in the existing floor covering. Fill low spots, holes, chips and seams or grout joints that may telegraph through the new flooring. Sand any highly polished or irregular/smooth surfaces. Use an embossing leveler to smooth any embossing or surface texture and to aid in proper bonding. DO NOT install directly over rubber flooring.

CAUTION - Determining suitability of existing flooring to install over rests solely with the installation contractor and General Contractor. When there is any doubt on suitability, the existing floor should be removed, or covered with an appropriate underlayment. Installations over existing resilient flooring may be more susceptible to indentation.

- ❖ **Adhesive Residue** - Remove or encapsulate adhesive residue as prescribed by the subfloor surface preparation manufacturer or adhesive manufacturer utilizing industry accepted methods (like mechanical removal or wet scraping).
- ❖ **Radiant Heat** - Radiant Heating: Radiant-heated subfloor systems can be concrete, wood or a combination of both. The heating system components must have a minimum of 1/2" separation from the flooring product. The maximum surface temperature should never exceed 85°F (29°C) under any condition of use. Use of an in-floor temperature sensor is recommended to avoid overheating. The radiant heating system must be operational and turned on at the high heat setting for at least 2 weeks prior to installation to reduce residual moisture. Three days prior to installation lower the temperature to 65°F. After installation, gradually increase the temperature in increments of 2-3°F (1-2°C) at a time every one to two days over 2-3 weeks bringing the system back to normal operating temperatures. This will allow the adhesive system to fully cure and minimize thermal expansion and contraction. Contact the manufacturer of your radiant heating system for further recommendations.
- ❖ **Undercut Door Jambs** - Using an oscillating saw or undercut saw and a scrap piece of flooring, place the piece of flooring next to the doorframe to undercut the thickness of the flooring to be installed. Proceed to undercut all door casings and other trim as appropriate.

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- ❖ **Bond Test** - Perform bond test in accordance with the current ASTM F3311 - Standard Practice for Mat Bond Evaluation of Performance and Compatibility for Resilient Flooring System Components Prior to Installation. This test is intended to help ensure that the prepared bonding surface is free from any surface treatment (sealer and curing agents, parting compounds, etc.) or condition (old adhesive, dust inhibitors, oil, grease, paint, varnish, or any other existing finish that is detrimental to the adhesive bond.
 - Perform bond test using the specified flooring and adhesive to the prepared surface in accordance with the following instructions.
 - Install 2 ft. x 2 ft. or larger test areas.
 - Tape edges of flooring to prevent rapid adhesive drying during testing.
 - Perform at least 2 tests per installation and one test every 2,000 - 3,000 SF.
 - Roll each test area according to the manufacturer's instructions.
 - Allow areas to cure for 72 hours or more before testing bond strength.
 - After 72 hours, pry up a corner with a floor scraper or utility knife and pull up the flooring by hand.
 - If the flooring is easily removed, the bond test failed. Remedial action must be taken to resolve the poor bond strength condition.
 - If the flooring is difficult to pull up or breaks apart when pulling up, the bond test passed. The substrate is considered acceptable for the application of flooring materials.
- ❖ **Surface Protection** - During spackling, painting pipe cutting and other functions that could contaminate the surface, cover to prevent contamination. Spackling, permanent marker, paint, paint thinner or machine oil, tape or other items that may contaminate the floor can cause discoloration or bond failure.
- ❖ **Install Flooring Last** - Allow other finishing trades, especially the overhead and wall trades, to complete their work before beginning the floor installation.
- ❖ **Lighting** - Provide good overhead lighting to help achieve proper subfloor preparation and installation. The ideal lighting will be equivalent to the facility lighting during normal use. Poor lighting is no excuse for improper workmanship.
- ❖ **Restrict Access to Installation Area** - Close working spaces to all non-essential traffic before, during and as specified after installation. Isolate and protect the newly installed flooring from traffic as specified by the adhesive used or as follows:
 - **FOOT TRAFFIC - Minimum of 24 Hours** from completion of the installation based on the adhesive used.
 - **ROLLING TRAFFIC OR HEAVY POINT LOADS - Minimum of 72 Hours** from the completion of the installation based on the adhesive used.

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- ❖ **Post Installation Cleaning** - The Flooring Contractor shall be responsible for the post installation cleaning. Only use low moisture damp mopping during the first week, as needed.
 - **DRY SOIL REMOVAL** - Remove loose soil and debris with an appropriate broom, shop vacuum or floor vacuum.
 - **WET SOIL REMOVAL** - Use a spray applicator to apply properly diluted neutral pH (7-9 pH) cleaner (Diversey Stride or similar) onto the floor in a manageable area. The spray application minimizes surface dampness and will dry more quickly.
 - **CLEAN THE FLOOR** - Agitate the cleaner solution with a microfiber flat mop over the floor. Replace the microfiber pad as it becomes soiled. Continue to clean additional sections of the floor until the entire area is clean. Alternately, use an auto scrubber with a 3M Red pad or equivalent pad or brush and apply a properly diluted neutral cleaner at the lowest flow setting with the vacuum system engaged.
 - **RINSE THE FLOOR** - Rinse the floor with water applied with a spray applicator and remove remaining residue with dry microfiber flat mops.
 - **LET DRY** - Let the floor surface dry with minimal use. Fans can be used to speed up the drying process.
 - Do not utilize normal wet maintenance on the floor for a minimum of 1 week after installation.

- ❖ **Post Installation Floor Protection** - After installation, the General Contractor and/or Flooring Contractor shall protect the flooring surface from damage by other trades until the space is turned over to the end user. Use construction grade paper or protective boards like Masonite, Ram Board, plywood, or other suitable surface protection. Do not use adhesive backed protective materials.

CAUTION - Adhering tape directly to the resilient flooring could damage the surface. Do not use tape to secure the surface protection material directly to the floor during construction or renovation. Tape the joints of the surface protective material together with a slight overlap and secure the edges directly to the base molding along the wall. This prevents dirt and debris from getting under the protective board and causing unintended damage to the flooring.

- ❖ **Documentation** - Record and photograph the site conditions, test results, corrective measures taken and installation process to include floor protection. All relevant preinstallation and installation documentation, photos, product invoices, shop drawings or project information, should be stored and maintained for the duration of all product warranties.

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CAUTION - While it may not be the flooring contractor's responsibility to conduct testing to verify the presence of an appropriate and intact vapor retarder or to perform other jobsite testing, the flooring contractor is responsible to make sure these tests/determinations are completed, documented and acceptable prior to installation.

CAUTION - All warranties and guarantees pertaining to the suitability and performance of any surface preparation, adhesive, maintenance or ancillary products or equipment rest with that product's manufacturer, reseller, specifier, and application contractor and not with LEKTRAFLOOR™. For each item used with LEKTRAFLOOR™ flooring products, carefully read, understand, and follow each product's label, installation, use and maintenance instructions along with the technical data sheet, warranty, and Safety Data Sheet (SDS). Subfloor and/or bond issues, telegraphing or other unacceptable conditions resulting from the adhesives, sealers, embossing levelers, patches, concrete, gypsum-based products and other surface preparation, installation, maintenance or surface protective items or any other items used are the sole responsibility of their respective manufacturer, reseller, specifier, or application contractor.

WARNING - Follow all applicable local, state, and national regulations and building codes; this includes the removal of in-place asbestos flooring and adhesive, as well as any lead-containing materials. The Occupational Safety and Health Administration (OSHA) has exposure limits for people exposed to respirable crystalline silica; this requirement must be followed. Do not sand, dry sweep, dry scrape, drill, saw, bead blast, or mechanically chip or pulverize existing resilient flooring, backing, lining felt, asphalt "cut-back" adhesive, or other adhesive. These products may contain asbestos fibers and/or crystalline silica. Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard. Always wear safety glasses and use respiratory protection or other safeguards to avoid inhaling any dust. 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. For proper removal procedures, follow the RFCI's Recommended Work Practices for Removal of Resilient Floor Covering. For further information, visit the Resilient Floor Covering Institute website at www.rfci.com.

5. SUGGESTED TOOL LIST

❖ Personal Protective Equipment (PPE)

- Safety Glasses
- Cut-Resistant Gloves
- Suitable Dust Mask (when generating dust)

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❖ **Substrate Preparation Tools**

- Floor Buffer and attachments
- Grinder and attachments (when needed)
- Floor Scraper and spare blades
- Oscillating Multi-Tool or undercut hand saw (for door jambs)
- HEPA-Filtered Vacuum & appropriate HEPA filters and dust collection bags

❖ **Measuring/Marking Tools**

- Tape Measure
- Pencil
- 10 ft. Straight Edge
- 6 ft Straight Edge
- 1 ft. Straight Edge or Level
- Automotive feeler gages (to measure dips and high points with straight edge on surface)
 - 1/32" (3/4 thickness of 1 Dime with 1 ft. straightedge)
 - 1/8" (1 Quarter & 1 Dime with 6 ft. straightedge)
 - 3/16" (2 Quarters & 1 Dime with 10 ft. straightedge)
- Speed Square (Carpenters Square or Framing Square)
- Chalk Line & Colored Chalk
- Non-Contact Infrared Thermometer
- Air Temperature & Humidity Gage

❖ **Installation Tools**

- Utility Knife with extra Blades
- Tile Cutter
- Adhesive Trowel and Blades - For selected adhesive
- Hand Roller
- 100 lb. Three Section Roller
- Knee Pads

6. ADHESIVES

LEKTRAFLOOR™ recommends using a premium LVT flooring adhesive that meets the project specifications. Critical points for adhesive selection include anticipated use conditions, time available for project completion, subfloor moisture and pH conditions. Critical points for adhesive use include proper trowel notch and open time for conditions (Porous or Non-Porous & Ambient Temp and RH), immediately rolling the floor with a 100 lb. 3-section roller and rolling the perimeter, under toe kicks and around columns or abutments with a hand roller to ensure complete contact between the adhesive, the subfloor and the back of the flooring.

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The following adhesive manufacturers have a longstanding tradition of providing quality resilient flooring adhesives. The manufacturer recommended adhesives for normal installations are listed with their contact information. As project requirements vary and adhesive offerings are constantly updating, please refer to your local flooring supplier or distributor to determine the best adhesive to use based on your specific project.

❖ BOSTIK

LOCK A490 LVT Adhesive

LOCK A799 Transitional Adhesive

Phone: 800-726-7845

Website: <http://www.bostik.com>

❖ DRITAC (SIKA)

5900 MegaBond Adhesive

Phone: 201-933-8800

Website: <https://www.dritac.com>

❖ MAPEI

Ultrabond Eco 360 Premium Adhesive

Ultrabond Eco 373 PS Adhesive

Technical Service: 800-992-6273

Website: <https://www.mapei.com/us>

❖ PARABOND (HB FULLER)

Fusion Series 5082 Vinyl Adhesive

Fusion Series 5092 PS Adhesive

Technical Service: 800-832-9023

Website: <https://www.parabond.com>

❖ ROBERTS / QEP

Roberts 7350 PS Adhesive

Customer Service: 888-875-5087

Website:

<https://www.robertsconsolidated.com>

❖ SCHONOX (HPS NORTH AMERICA)

EMICLASSIC Universal PS Adhesive

SCHONOX ROLL AND GO Adhesive

Phone: 256-246-0345

Website: <https://www.hpsubfloors.com>

❖ SPRAY-LOCK

Spray-Lock 6500 Spray Adhesive

Phone: 423-305-6151

Website: <https://www.spraylock.com>

❖ STAUF USA

D737 High-Tack Adhesive

UVF-867 Universal Vinyl Adhesive

Phone: 901-820-0007

Website: <http://www.staufusa.com>

❖ TAYLOR FLOORING ADHESIVES

Pinnacle Transitional Adhesive

Versatile PS Adhesive

Technical Service: 706-712-5823

Website: <https://www.tayloradhesives.com>

❖ TEC (HB FULLER)

RollFast 776 Adhesive

TrowelFast 778 Adhesive

Technical Service: 800-832-9023

Website: <https://www.tecspecialty.com>

❖ UZIN UTZ NORTH AMERICA

KE 2000 S Universal Adhesive

WK 222 Solvent-Free Contact Adhesive

Phone: 866-505-4810

Website: <https://us.uzin.com>

❖ WAKOL (LOBA-WAKOL)

D 3320 Adhesive

D3120 PS Adhesive

Phone: 704-527-5919

Website: <https://www.loba-wakol.com>

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❖ W. W. HENRY (ARDEX AMERICAS)

Henry 650R PS Adhesive

Henry 695 High RH Vinyl Adhesive

Phone: 800-232-4832

Website: <https://www.wwhenry.com>

❖ XL BRANDS (BOSTIK)

STIX 5900 High Shear Adhesive

STIX 2230 PS Adhesive

Technical Service: 706.508.5907

Website: <https://xlbrands.com>

NOTE - Open time and working times may vary based on temperature, humidity, substrate porosity, trowel size and air flow.

CAUTION - Troweling new adhesive over existing adhesive may result in telegraphing. Do not leave ridges, voids or puddles that can telegraph through the flooring.

- ❖ **Determine Substrate Surface Water Absorption (Porosity)** - Test all concrete substrates per ASTM F3191 "Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive Resilient Flooring" to confirm porosity. The test results determine the proper adhesive application method and how the adhesive will react when applied to the slab.

Use a pipette or other means to apply a single .05 mL (1/4" wide) droplet of clean, potable water onto the surface. If the water droplet absorbs into the surface within 60 seconds, the substrate is considered porous. Conduct 3 tests for the first 2000 sq. ft. and one for each additional 3000 sq. ft., at least one test per room. For areas where the water droplet does not absorb into the surface within 60 seconds, the surface is considered non-porous.

CAUTION - Always check non-porous substrates to make sure there is not any surface contamination, curing compound or concrete additive that would alter the surface porosity and or adhesive bonding ability. Determine if any additional corrective actions should be taken through consultation with the adhesive and surface preparation material manufacturers.

- ❖ **Porous Surfaces** - For most dispersion adhesives, place the resilient flooring into the adhesive after about 10-20 minutes open time as the adhesive valleys turn clear. Immediately roll the flooring with a 100 lb. roller, checking to ensure complete contact with the adhesive. DO NOT exceed the working time of the adhesive (refer to adhesive label).
- ❖ **Non-Porous Surfaces** - For most dispersion adhesives, it is recommended to back roll the freshly troweled adhesive. This step helps prevent adhesive trowel ridges from telegraphing through the installed flooring. Install flooring into adhesive when it is 80% or more clear (dry to touch with no or slight transfer when touched and tacky). This normally takes about 30 to 45 minutes open time at the recommended installation temperature and humidity. DO NOT exceed working time of the adhesive (refer to adhesive label).

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- ❖ **Adhesive Transfer** - During installation, frequently check the back of the flooring to ensure a minimum of 80% adhesive coverage onto the back of the flooring.
- ❖ **Roll Flooring** - Slowly roll the flooring with a 100 lb. 3-section roller immediately after installation within the adhesive open time, overlapping each pass 50%. Roll the perimeter, under toe kicks and around columns or abutments and areas that the 3-section roller cannot properly reach with a hand roller. Ensure complete contact between the adhesive, subfloor, and back of the flooring.
- ❖ **Adhesive Clean-Up** - Wet adhesive should be cleaned using clean cloth with soap and water. Dried adhesive may require the use of 70% isopropyl alcohol and/or mineral spirits. Always test the cleaner in an inconspicuous area before use on the floor. Apply the cleaner to a clean cloth and apply from the outer edge of the spot inwards to the middle. For hardened adhesive, let the cloth with cleaner sit on the adhesive for 1-2 minutes and then begin to remove from the outer edges inward. Repeat the application and cleaning process until the surface is clean or no further improvement is observed. After cleaning, rinse the area with clean water and dry the surface.

7. ACCLIMATION REQUIREMENTS

- ❖ **Weathertight** - The area to be installed must be fully enclosed and weathertight with all doors and windows installed.
- ❖ **Operational HVAC** - HVAC (Permanent or Temporary) must be in continuous operation for a minimum of 7 days prior to start of installation and continuously thereafter. The HVAC must be in continuous operation set to 72°F (22°C) and between 35%-55% RH for a minimum of 7 days prior to and continuously while moisture testing is being performed.
- ❖ **In-Use Service Temperature** - During moisture testing, acclimation and installation, the room temperature and substrate surface temperature should be at the expected in-use service temperature or 72°F (22°C) and consistently maintained $\pm 5^{\circ}\text{F}$ ($\pm 3^{\circ}\text{C}$).
- ❖ **Acclimation** - Acclimation is achieved when the flooring, adhesive, accessories, and subfloor surface are all within 3°F (2°C) of one another and within $\pm 5^{\circ}\text{F}$ ($\pm 3^{\circ}\text{C}$) of the expected in-use service air temperature. Do not stack cartons more than 5 cartons high and space 6 inches apart to optimize acclimation.
- ❖ **Temperature & RH** - In all instances, the temperature shall be maintained at the in-use service temperature $\pm 5^{\circ}\text{F}$ ($\pm 3^{\circ}\text{C}$) and/or a constant temperature $\pm 5^{\circ}\text{F}$ ($\pm 3^{\circ}\text{C}$) between 65°F-85°F (18°-29°C) and the room relative humidity (RH) shall be maintained between 35%-55% RH for a minimum of 48 hours before, during and 7 days after installation.

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- ❖ **Protect from Direct Heat/Cold Exposure** - Ideally, store flooring and other materials in the “center” of the installation area (away from exterior walls or outside doors, air vents, heat/cold sources, and direct sunlight, etc.) Storing cartons in direct sunlight or exposed to other heat or cold sources can affect acclimation by inducing thermal expansion/contraction. Protect from heat/cold sources by taping over air registers and prevent direct sunlight by blocking out windows with plastic, cardboard or window treatments or other protection for a minimum of 48 hours before, during & 48 hours after installation.

8. LAYOUT

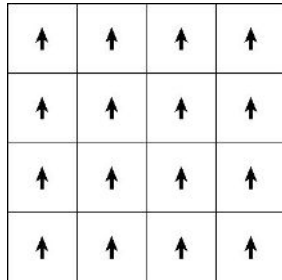
LEKTRAFLOOR™ flooring has arrows on the back to show the manufacturing direction. All flooring should be installed with the flooring arrows pointed in the same direction or quarter turned to have a consistent flooring orientation. Mix flooring from 5 cartons at a time and space out prominent visual characteristics so they are not grouped together during installation.

- ❖ **Balance the Installation** - It is preferable to install resilient flooring with the width of the last rows on opposite sides of the area to have an equal measurement. This also applies for the lengthwise distance of the last row when the flooring is installed in a repeating pattern. For plank flooring installed in a random pattern, the installation may start along the longest straight wall for smaller areas or installed centered with equal distances across the width.
- ❖ **Determine the Layout** - Establish the layout and tile direction based on the architect's drawings or floor layout provided. If there is no floor layout or guidance provided, dry lay a carton of flooring and review with the facility or owner using these general guidelines.
 - The layout should align the long axis of planks/tiles towards the main windows and/or parallel to the longest wall.
 - The layout should also align the long axis of planks/tiles in the direction of traffic in corridors when possible.
 - Utilize the recommended patterns to achieve the desired visual effect.

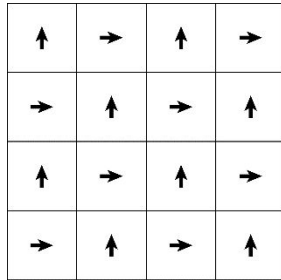
Commercial Resilient Installation

Here are layout recommendations for each product size:

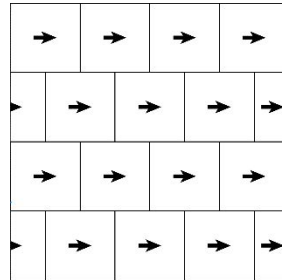
18" x 18" and 24" x 24" Tiles



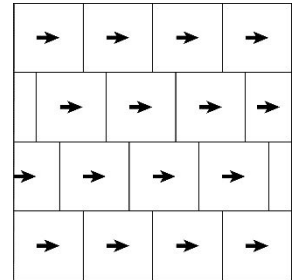
Straight



Quarter Turned



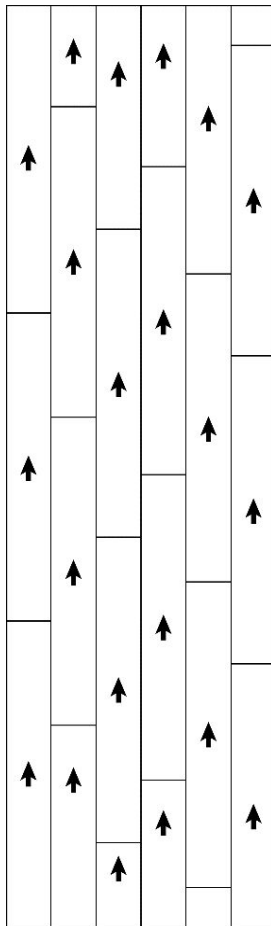
Brick (1/2 Step)



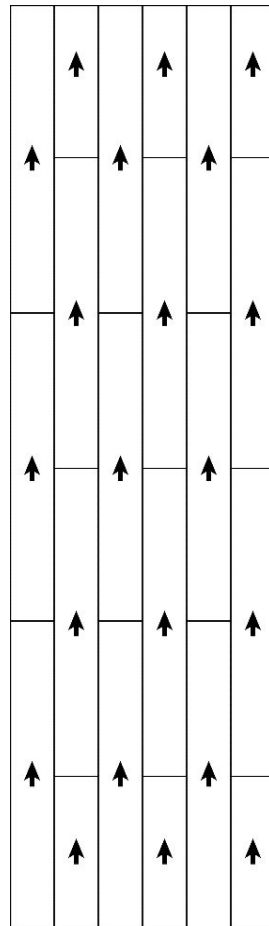
Stagger (1/3 Step)

CAUTION - Colors 23101 Breathtaking and 23102 Charming SHALL BE QUARTER TURNED.

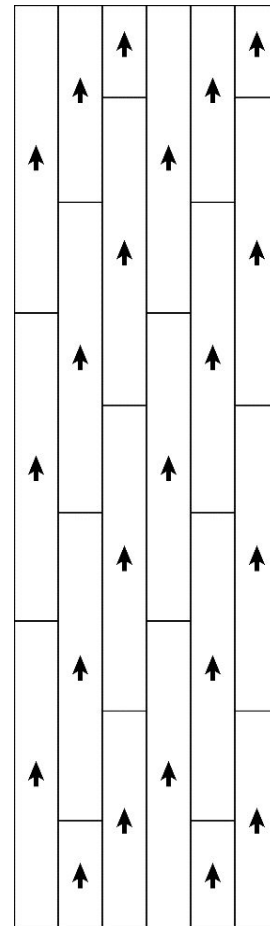
7" x 48" Planks



Random



1/2 Step



1/3 Step

Commercial Resilient Installation

- ❖ **Plank End Joint Spacing** - End joints should be staggered a minimum of 6-8 In. (15-20 cm) apart to maintain a random visual appearance or as specified if there is a pattern.
- ❖ **Seam Alignment** - Whenever possible, plan the layout so that the flooring seams or joints do not align with joints or seams in the existing flooring or underlayment panels.
- ❖ **Establish Starting Lines** - Once the flooring layout has been determined, mark the starting line(s) for the installation.

To make the starting line(s), determine the center of each of the end walls (the walls perpendicular to the long dimension of the planks and tiles) and mark with a pencil.

You can either calculate the dimensions of the last row or dry the flooring from the center point to the side wall to determine the last row's width.

- **CALCULATE** - To calculate the last rows width, take the distance from the side wall to the center mark and divide the distance (in inches) by the width of the flooring (in inches) to get the number of full planks and remainder or portion of a tile. If the value of the remainder is less than 0.5 (1/2 the flooring width), you should move the starting point over 1/2 the width of the flooring. This will increase the size of the last row, which will provide a better visual appearance.
- **DRY LAY** - Do a dry layout of planks and/or tiles from the center line to the wall running parallel to the long direction of the planks and tiles to determine the width of the last row of planks. • Avoid having border pieces less than 3" (7.6 cm) wide. If you find the border planks will be less than 1/2 the width of the plank, the center starting line should be shifted a distance equal to 1/2 the plank width. This will "balance" the room and provide for a larger cut piece at the wall.
- **MARK STARTING LINES** - Connect the points by striking a chalk line or use a straight edge and pencil connecting the starting points down the center of the room. For installing patterns where you want to balance the room on all sides, repeat this process for establishing a perpendicular start line in the length of the room.
- **3-4-5 MEASUREMENT** - The Pythagorean Theorem states that the sum of the squared sides of a right triangle equals the length of the hypotenuse squared. Simply put, the two squared values of the perpendicular sides of a right triangle will equal the squared value of the long side of the triangle, or $A^2 + B^2 = C^2$. This formula will make sure that the starting lines are perpendicular, by measuring a right triangle from the bisecting lines.

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To begin, measure exactly 3 ft. (or a multiple of 3 ft. 3 – 6 – 9 etc.) from the starting point on the shorter chalk line and make a mark. Measure 4 ft (or the same multiple 4 ft. 4 – 8 – 12 etc.) from the same starting point on the longer chalk line and make a mark. Now measure the distance from the two marks and it should measure exactly 5 ft. (or the same multiple of 5 – 10 – 15 etc.) for the other measurements. If it does not come out to the correct length, the lines are not perpendicular and need to be adjusted. Once the starting lines are perpendicular and positioned to balance the installation, you are ready to begin the installation.

9. INSTALLATION

- ❖ **Inspect Materials** - Carefully inspect all materials as you install. Before starting, confirm the flooring materials are the correct color, size and quantity and have a single dye lot for each room or floor. Immediately report any damage or discrepancies and do not install flooring until all issues are resolved.
- ❖ **Final Review of Jobsite Conditions** - Make a final inspection and confirmation that all jobsite conditions are in specification and materials and jobsite are properly acclimated prior to beginning the installation. Once the installation has started, you have accepted those conditions.
- ❖ **Precautions for Occupied Installations** - Take necessary precautions to minimize noise, odors, dust, and disturbance to occupants during installation.
- ❖ **Flooring Layout** - Install the flooring as specified in the architect drawings or as agreed to with the GC and/or owner. Make sure all flooring is installed running in the same direction or quarter turned as specified.
- ❖ **Mix Cartons Together** - Mix multiple boxes (5 or more for larger installations) from the same Dye Lot making sure to spread out and position flooring with distinct and repeating characteristics, so they are not grouped together.
- ❖ **Apply Adhesive** - Spread adhesive using the specified notch trowel for jobsite conditions in accordance with the adhesive label instructions. Spread the adhesive uniformly holding the trowel at a 45°-65° angle. Avoid skips, puddles or sharp trowel turns. Apply adhesive over the floor working your way from the far end of the room towards the door. Allow the specified open time for the adhesive, depending on the porosity of the substrate and the site conditions. The adhesive may need to be dry to the touch prior to installation - refer to the product instructions for specific requirements. Only apply as much adhesive as can be covered and rolled during the adhesive working time. Scrape up adhesive that has remained open too long.

Commercial Resilient Installation

If adhesive gets on the surface of the flooring or on other items, immediately remove it using a clean cloth with soap and water. If the adhesive has dried, use a small amount of 70% Isopropyl alcohol on a clean cloth to remove it.

- ❖ **Install Flooring** - Once the adhesive has been open for the specified time, install the flooring aligned to the starting lines using light, consistent and even pressure. Do not compress or tightly fit the flooring together as this can cause buckling or edge lifting issues. Make sure the starting row is straight. Carefully place additional flooring maintaining a net fit and proper alignment. If there is a pattern, pay close attention to proper positioning of each piece, keeping uniform and equal spacing and tile direction. Continue the installation and trim the floor neatly to fixtures, cabinets and built-in furniture, trim to equipment anchors, air registers and floor outlets, to abutments, walls and columns or other interruptions of the floor surface. Extend flooring into toe spaces, door reveals, recesses, closets, and similar openings unless otherwise indicated. Always place factory edge to factory edge and position cut edges against the wall or abutment.
- ❖ **Cutting Flooring** - Begin by aligning a straight edge or speed square on the flooring along the cut line to cut the desired length. Score the top side of the flooring with a sharp utility knife along the straight edge or framing square. When you have cut through the wear layer, bend the flooring along the cut and snap downward. For intricate cuts or fitting use a jigsaw with carbide blade. Alternately, a heat gun may be used to help make intricate cuts by carefully applying heat to the area to be cut and trim the flooring to fit around vertical obstructions. Allow the heated flooring to cool to room temperature before installation. Always follow the equipment manufacturers' current instructions and safety precautions.

CAUTION - When cutting resilient flooring in a narrow piece or to a point, it may cause delamination. This type of delamination is not a product defect and shall be fixed in the field utilizing the following process. Apply a thin bead of Super Glue (ethyl cyanoacrylate-based glue) to the inside surface of the flooring, press and hold together for a moment for the adhesive to set. This will fuse the resilient flooring back together. Be careful not to glue your fingers together or fingers to the flooring. While the adhesive is wet, immediately clean any residue from the top surface.

- ❖ **Roll Flooring** - Immediately roll the flooring using a 3-section 100 lb. roller after each area is installed within the working time of the adhesive. Slowly and carefully roll the floor overlapping each pass 50%. Slowly re-roll the installed area in the opposite direction with the 100 lb. roller overlapping each pass 50%. Continue to roll the floor throughout the working day to ensure a proper bond. Roll the perimeter and under all toe kicks, around columns and other vertical surfaces with a hand roller.

Commercial Resilient Installation

Check the flooring frequently to ensure complete adhesive coverage (80% or more) to the back of the flooring and that all trowel ridges are completely flattened.

- ❖ **Post Installation Cleaning** - The Flooring Contractor shall be responsible for the post installation cleaning as detailed above or for the Post Construction Cleaning as outlined in the [LEKTRAFLOOR™ Commercial Maintenance Guidelines](#). Only use low moisture damp mopping during the first week, as needed.
- ❖ **Post Installation Inspection & Documentation** - Visually inspect the floor installation to ensure the seams are tight and properly spaced or staggered, the rows are straight and aligned with the area and the overall appearance is satisfactory. Take photographs and have any required documentation signed and filed upon completion of the installation.
- ❖ **Post Installation Protection** - After installation, the General Contractor and/or Flooring Contractor shall protect the flooring surface from damage by other trades until the space is turned over to the end user. Use construction grade paper or protective boards like Masonite, Ram Board, plywood, or other suitable surface protection. Do not use adhesive backed protective materials.

LEKTRAFLOOR™ flooring should be installed by professional flooring contractors who have demonstrated successful experience with projects of similar size, scope, and complexity. LEKTRAFLOOR™ does not warrant the installers workmanship. For warranty information, please review the limited product warranty which is available for download on the [LEKTRAFLOOR™ website at www.LEKTRAFLOOR.com](http://www.LEKTRAFLOOR.com).