METROFLOR LVT

Flexible LVT **by METROFLOR**™

Installation Manual

DRYBACK LVT/LVP
(LUXURY VINYL TILE/PLANK)

Revised 04/01/2022
Note: This document supersedes all printed and electronic Installation and Technical Guides previously distributed for Metroflor LVT.

INTRODUCTION

Metroflor® LVT Dryback is a high-performance, "dryback" (glue-down) flooring product, designed for permanent installations using the full-spread professional installation method, applied with an appropriate Prevail adhesive.

This document will provide you with information to help you assess the jobsite conditions, select quality subfloor preparation materials, and ensure that your work is completed to the highest of standards. Good preparation, communication between all parties, and attention to detail when following instructions are key to a successful installation.

This document provides information and guidance based upon years of collective experience and best industry practices. Metroflor LVT should only be installed by professional flooring mechanics that have demonstrated successful installations of jobs in similar size and scope. For the most secure warranty protection, Metroflor LVT flooring should be installed in strict accordance with the information and procedures outlined in this document. It is highly recommended that you review this document entirely before starting an Metroflor LVT flooring installation.

It is important to avoid problems from the outset. If you are unsure of any information provided in this document or are having a problem with your installation, please stop your work and contact Metroflor LVT Customer Service for additional guidance. **Metroflor LVT Customer Service can be reached at (888) 235-6672, Monday through Friday, 8:00 a.m. to 5:00 p.m. EST.**

PRODUCT DESCRIPTION / CLASSIFICATION

Luxury Vinyl Tile and Plank (LVT/LVP)

Classification: (ASTM F1700): Class III, Type B

Overall Gauge:

0.080" (2.0mm)

0.098" (2.5mm)

0.118" (3.0mm)

Wear Layer:

6mil (0.15mm)

8mil (0.20mm)

12mil (0.30mm)

20mil (0.51mm)

General Information

The key to a successful and trouble-free installation is thorough preparation. Do not install Metroflor LVT flooring without first performing a thorough on-site evaluation (including jobsite testing), ensuring that subfloor preparations are finished, and that the work of all other trades has been completed. Site conditions must comply with the information provided within this document, with the requirements detailed in ASTM F710, "How to Prepare Concrete Substrates to Receive Resilient Flooring," as well as relevant building codes, and local, state and national regulations. Note: It is highly recommended to have substrate moisture and PH testing conducted by a certified ICRI (International Concrete Repair Institute) Tier 2 technician. Documentation of moisture and pH test results may be required when submitting Metroflor LVT claims.

- Metroflor LVT is available in different sizes and formats. Note: Be aware that some Metroflor LVT products are square edge and some are micro-beveled. Mixing different edge treatments together will require hand beveling of the square edge material.
- Metroflor LVT is intended for interior use only and is suitable for above-grade, on-grade and below-grade applications. However, Metroflor LVT should not be installed in locations where the substrate beneath the building structure is exposed to the elements.
- Metroflor LVT is not recommended for exterior installations or for use in areas that are not climate-controlled.
- Metroflor LVT is recommended for the use over properly prepared concrete, suspended wood, metal and other suitable substrates.
- Acclimate flooring, adhesives, and the job-site: only install Metroflor LVT in climate-controlled structures consistently maintained at temperatures between 65°-85°F (18°-29°C) and 35%-85% RH a minimum of 48 hours before, all times during, and continuously after installation.
- Protect Metroflor LVT from foot traffic for 24 hours after installation. Do not wash Metroflor LVT for five days after installation.

JOBSITE INSPECTION & TESTING

Prior to installation, plan and attend an on-site construction meeting with the General Contractor, Architect, and Property Owner to review all requirements and inspect site conditions as outlined in this document, as well as those outlined in ASTM F710, and any relevant building codes, and local, state or national regulations. Flooring installation should not begin until all site conditions have been assessed, testing has been completed, the subfloor has been prepared, and all conditions are in compliance. Defects should be addressed immediately and corrected before installing Metroflor LVT Flooring. Installation of material constitutes acceptance of all conditions.

1. The building must be completely sealed before jobsite testing can begin (ASTM F710). This includes: windows, doors, roofing, walls, etc.
2. Interior environmental conditions must be maintained at 65°-85°F (18°-29°C) and 35%-85% RH a minimum of 48 hours before testing, and at all times during testing (ASTM F710).
3. Plan, prepare, and protect the substrate moisture test-sites for the duration of the testing in order to achieve valid results.
4. Subfloor flatness for all substrates shall not exceed 3/16" in 10 ft. (3.9mm in 3m).

MATERIAL RECEIVING, HANDLING & STORAGE

1. Upon receipt, immediately remove any shrink-wrap and check material for damage, and that the material is of the correct style, color, quantity, and run number(s).
2. Immediately report any discrepancies.
3. General Storage: Store all materials flat and off of the floor in an acclimatized, weather-tight space between 65°-85°F (18°-29° C). Do not double-stack pallets.
4. Jobsite: Acclimate Metroflor LVT material and Prevail adhesives in the acclimatized jobsite between 65°-85°F (18°-29°C) and 35%-85% RH for 48 hours prior, all times during, and maintain temperature continuously after installation. Spread unopened cartons no more than 6 cartons high and at least 4" apart. Keep away from heating and cooling ducts and direct sunlight. If permanent HVAC is not yet operational, temporary means should be used to maintain the noted temperature and RH.

Subfloor Preparation

Metroflor LVT can be installed on wood, concrete, terrazzo, stone, and many other properly prepared subfloors, including in-floor heating. One key factor to ensuring an excellent, finished appearance of an Metroflor LVT floor is careful subfloor preparation. The information provided in this document includes general recommendations on how to prepare various types of subfloors. The selection of all materials, including: moisture-mitigation systems, self-leveling compounds, floor patch products, wood underlayments, and any other ancillary products are dependent upon existing conditions. The application of subfloor preparation materials must be in strict accordance with the manufacturer's instructions. **All warranties and guarantees pertaining to the suitability and performance of any preparation or ancillary product rests with that material manufacturer or the Flooring Contractor and NOT with Metroflor® Corporation. The condition of the subfloor and bond issues resulting from the use of non-recommended, improper, or incorrectly prepared adhesives, sealers, embossing levelers, patches, concrete, gypsum-based products and other such items, are the sole responsibility of the Flooring Contractor, General Contractor, and/or manufacturer of the particular sub-flooring product.**

Metroflor Corporation recommends both ARDEX and SCHÖNOX **subfloor preparation materials** for use with Metroflor LVT flooring and Prevail adhesives. Prevail adhesives have been tested for compatibly and performance and **must be used** with the following subfloor preparation products.

ARDEX

- ARDEX K 15® - Premium Self-Leveling Underlayment
- ARDEX V 1200™ - Self-Leveling Flooring Underlayment
- ARDEX FEATHER FINISH® - Self-Drying, Cement-Based Finishing Underlayment
- ARDEX FORTI FINISH™ - Self-Drying, Reinforced, Cement-Based Finishing Underlayment
- ARDEX MC RAPID™ - One-Coat Moisture-Control System For Concrete to Receive ARDEX Underlayments

SCHÖNOX

- SCHÖNOX AP – Synthetic Gypsum-Based, Self-Leveling Compound
- SCHÖNOX APF – Synthetic Gypsum-Based, Fiber-reinforced, Self-leveling Compound
- SCHÖNOX ZM – Cement-Based, Self-Leveling Compound
- SCHÖNOX ZM RAPID – Rapid-Setting, Self-Leveling Compound
- SCHÖNOX US – Cement-Based, Self-Leveling Compound
- SCHÖNOX EPA – Two-Part, Epoxy-Based, Moisture-Mitigation System

Please contact these vendors for any questions regarding the application and warranty information of their products:

ARDEX TECH. SUPPORT:

ARDEX Americas
400 Ardex Park Drive
Aliquippa, Pennsylvania 15001

Toll-Free Phone:
(888) 512-7339
Phone: (724) 203-5000
Fax: (724) 203-5001
Email: info@ardexamericas.com

SCHÖNOX TECH. SUPPORT:

HPS North America
511 Wilhite Street
Florence, AL 35630

Toll-Free Phone:
(855) 391-2649
Phone: (256) 246-0345
Fax: (256) 246-0346
Email: info@hpsubfloors.com

CONCRETE SUBFLOORS

General Conditions

All concrete floors, regardless of age or grade level must be properly cured, free of excess moisture, and prepared in accordance to the most current version of ASTM F710 (Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring). Below and on-grade concrete subfloors must have a suitable vapor retarder properly installed beneath the slab (ASTM E1745). The surface of concrete floors to receive resilient flooring shall be dry, clean, smooth, and structurally sound. They shall be 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 (ACI 302.1 and ASTM F710). Non-chemical methods for removal, such as scraping, abrasive cleaning, or bead-blasting, including methods described in ASTM D4259 (Standard Practice For Abrading Concrete), may be used on existing slabs with deleterious residues. In all cases, the subfloor must meet the moisture and pH requirements prior to installation.

Warning: Concrete Subfloors Containing Coal Fly Ash: Fly ash is routinely used in cement in LEED-certified projects. No doubt it will continue to grow in popularity as LEED points become the norm in commercial construction. Fly ash contains silicon dioxide and calcium oxide. Silicon is difficult to bond to, and calcium oxide is a caustic, alkaline by-product which plays havoc on flooring adhesives. Installing floors on concrete substrates containing coal fly ash can be problematic and therefore may require aggressive scarification or shot blasting prior to installation of flooring materials. Perform bond test prior to the installation of Metroflor LVT flooring. Refer to the manufacturer's instructions of such subfloor preparation products for guidance regarding the proper use of their products.

Moisture and Alkalinity: Perform either the In-Situ Relative Humidity (RH) test (ASTM F2170) or Moisture Vapor Emission Rate (MVER) test (ASTM F1869) in strict accordance to the most current version. Test surface alkalinity per ASTM F710. Refer to "Prevail Adhesives" section (starts on page 8) for acceptable moisture and pH ranges. Follow the Prevail adhesive instructions located on the product label, or refer to the Prevail Adhesives chart included in this document for further information. If test results exceed recommended adhesive tolerances for moisture, then the area must be allowed to further dry to an acceptable level, or remediated using a moisture-mitigation system before installing Metroflor LVT. ***(Note: see "Moisture Mitigation" section, page 6*)**. Concrete floors should be tested for pH following the procedures outline in the most current version of ASTM F710. Rinsing and vacuuming with clean, potable water is the best way to lower surface pH, but it will not prevent future issues. Do not acid-rinse concrete floors to neutralize pH. Some moisture-mitigation systems are designed to control pH. Electronic meter testing is not considered a replacement for a Calcium Chloride Test or Relative Humidity Test.

ATTENTION: Mold and mildew grow only in the presence of moisture. Jobsite mold and moisture issues must be addressed and corrected prior to installation. Please visit www.epa.gov/mold for information about safely preventing and removing mold, mildew and other biological pollutants.

Floor Flatness: The surface shall be flat to 3/16" in 10 ft. (3.9 mm in 3 m). Level high spots by sanding, grinding, etc. and fill low spots. Smooth surface to prevent any irregularities or roughness from telegraphing through the new flooring.

Concrete PSI: Concrete substrates must have compression strength of 3,000 psi or greater.

Concrete Absorbency: Be aware that absorbent (porous) and non-absorbent (non-porous) subfloors may require different trowel sizes for adhesive application. Check absorbency by randomly placing 1" diameter droplets of water directly onto the surface of the concrete subfloor. If the water droplet does not dissipate within 60-90 seconds, then the substrate is considered non- absorbent. Even after removing old, glued-down flooring materials, do not assume that the concrete is absorbent (porous). Often, the old adhesive has sealed the floor. See the Prevail adhesive chart or pail label for recommended trowel sizes.

Chemical Abatement / Other Contaminants: The use of adhesive removers or solvents in the abatement process or removal of existing or old adhesives is prohibited, and may void the warranty. If oil, grease or other contaminants have deeply penetrated the concrete and cannot be thoroughly removed, do not install Metroflor LVT Luxury Resilient Flooring.

Expansion Joints / Isolation Joints: Such joints (or other moving joints) are incorporated into concrete floor slabs in order to permit movement without causing random cracks in the concrete. These joints must be honored and not be filled with underlayment products or other materials, and floor coverings must not be laid over them. Expansion joint covering systems should be detailed by the architect or engineer, and based upon intended usage and aesthetic considerations.

Treating Surface Cracks: Cracks, grooves, depressions, control joints, or other non-moving joints, and other irregularities shall be filled or smoothed with high-quality Portland cement-based patching or underlayment compounds for filling or smoothing, or both. Some surface cracks may need to be chased and filled. Patching or underlayment compound shall be moisture, mildew,and alkali-resistant, and shall provide a minimum of 3,000 psi compressive strength after 28 days, when tested in accordance with Test Method ASTM C109 or ASTM Test Method C472, whichever is appropriate. Refer to manufacturer's instructions of such subfloor preparation materials for more details.

Self-Leveling and Patching: For concrete subfloors, use only high-quality Portland cement or synthetic, gypsum-based materials (minimum 3,000 psi compressive strength per ASTM C109), and allow to dry according to manufacturer's instructions. Self-leveling compounds may have very high moisture content, thus requiring longer curing times.

General Conditions (cont.)

Note: Adding latex to levelers will normally make the floor NON-POROUS. Test for porosity and follow non-porous adhesive recommendations, if necessary. Follow the manufacturer's instructions, and do not over-water patching and leveling compounds. The installer is responsible for observing cure times, moisture content, adhesive bonding, and the structural integrity of any leveling or patch compound used.

WARNING: Do not lightly skim-coat highly polished or slick, power-troweled concrete surfaces. A thin film or residue of floor patch will not bond sufficiently to a slick subfloor and may become a bond breaker, causing tiles to release at the interface of the subfloor and patching material. In addition, it may be an unnecessary, added expense.

New Concrete

New concrete subfloors contain a high percentage of residual moisture. Allow new concrete, including lightweight and gypsum toppings, to cure for at least 90 days before conducting moisture tests. In lieu of wet curing, quite often curing agents are applied to concrete slabs to retard the escape of water during the initial curing process. Compounds left on the slab can retard the escape of free-water during the drying process and eventually break down over time after the flooring is installed, affecting the integrity of the bond. Solvent-based adhesives will not adhere, and water-based adhesives will not set-up and properly cure. **Note: In the event of adhesion failure, the responsibility for warranties and performance guarantees rests with the compound manufacturer and not with Metroflor Corporation.**

Old Concrete

Old or existing concrete subfloors may pose more of a risk than new concrete, therefore requiring special attention. Remove existing floor covering, all traces of old adhesives, paint, or other contaminants by scraping, sanding, grinding, shot-blasting or scarifying the substrate. **The use of adhesive removers or solvents in the abatement or removal of existing or old adhesives is prohibited and may void the Metroflor LVT warranty.**

WARNING: ASBESTOS & SILICA – Refer to the current Resilient Floor Covering Institute (RFCI) document "Recommended Work Practices for Removal of Existing Resilient Floor Coverings" for guidance.

Power-Troweled Concrete

Power-troweled concrete surfaces can be very slick, relatively non-absorbent, and may produce surface laitance. These conditions can have an adverse effect on the bondability of subfloor preparation materials, flooring adhesives, and therefore mechanical preparation (such as shot-blasting or scarification) is recommended. Always perform bond tests to determine suitability.

Lightweight Concrete: The minimum density of lightweight concrete should be greater than 90lbs. per cubic foot, with minimum compression strength of 2,500 psi or greater. Perform only In-Situ Relative Humidity (RH) test in strict accordance to the latest edition of ASTM F2170. Existing lightweight concrete or gypsum substrates may need to be primed prior to the installation of flooring. Contact the Subfloor Preparation manufacturer for recommendations, and always perform a bond test before proceeding. You can also contact Metroflor LVT Customer Service for assistance by calling (855) 400-7732, Monday through Friday, 8:00 a.m. to 5:00 p.m. CST.

In-Floor Heating: Radiant heating systems must be cast ½" below the surface of the concrete slab, and should be operating at least 2 weeks before installing Metroflor LVT flooring. Set the temperature of the radiant heating system to 68°F 48 hours before, at all times during, and 72 hours after installation. The temperature of the radiant heat floor may be gradually increased 72 hours after installation, but the surface temperature should never exceed 85°F. Contact the manufacturer of your radiant heating system for further recommendations.

Moisture Mitigation

Concrete subfloors that exceed the maximum moisture value per the specified Prevail adhesive must be brought into compliance prior to the installation of Metroflor LVT flooring (Refer to "Prevail Adhesives" section, starting on page 8, for moisture tolerances). Due to the complexities associated with concrete moisture vapor emissions and movement of soluble salts in concrete subfloors, Metroflor Corporation does not warrant a specific product. Metroflor Corporation does recommend the use of products that meet the criteria listed in ASTM F3010 (Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings). Refer to recommended Subfloor Preparation Materials under the "Subfloor Preparation" section in this document.

WOOD SUBFLOORS

General Conditions

Metroflor LVT is recommended for use on suspended wood subfloors. Wood subfloors should have standard, double-layer construction with a minimum total thickness of at least 1" (25mm). As a finish layer, use minimum ¼" (6mm) thick, APA-rated "underlayment grade" plywood with a fully sanded face, or other underlayment panel that is appropriate and warranted for the intended use. Follow manufacturer's instructions. Wood subfloors must be sturdy, sound, and flat within $^{3}/_{16}$" in a 10-foot radius, and should not slope more than 1" per 6 ft. in any direction, with a minimum 18" (45cm) of well- ventilated air space underneath. Crawl spaces should be insulated and protected by a vapor barrier. Do not install Metroflor LVT flooring over a sleeper type subfloor, or over plywood that is in direct contact with a concrete slab. All wood substrates must meet national and local building code requirements.

General Conditions (cont.)

Test wood subfloors and underlayment panels using a suitable wood-moisture meter. The maximum moisture content is 14%, and the readings between the subfloor and underlayment panels should be within 3% prior to installing the underlayment panels.

UNDERLAYMENT PANELS:

Underlayments for resilient flooring must be:.

- Structurally sound
- Specifically designed and warranted for resilient flooring
- A minimum of ¼" (6mm) thick
- Of a smooth surface, so as to prevent telegraphing
- Able to resist indentations
- Free of any substances that may cause flooring to stain

Plywood: Use only American Plywood Association (APA) rated underlayment grade plywood, with a minimum grade of "BB" or "CC", and minimum ¼" thickness. Allow expansion spacing between plywood butt joints of 1/32"–1/16", or follow manufacturer's instructions. When installing underlayment, stagger cross-joints 4' on an 8' panel (minimum 16"), lightly butt the panels, and set fasteners flush or slightly below the surface level of the underlayment. Fill underlayment seams, nail holes, and any indentations with an approved Portland Cement-type floor patch, allow recommended drying time, and sand the patch until smooth. Otherwise, use manufacturer-certified poplar, birch, and spruce plywood underlayment, with a fully sanded face and exterior glue. All dust must be COMPLETELY removed to ensure a strong adhesive bond. Vacuum or sweep thoroughly, then apply adhesive.

Lauan Plywood: Use only Type 1 lauan exterior grade "BB" or "CC" for underlayment. The use of lesser grades of lauan plywood is unacceptable, and may cause severe problems when used as an underlayment, including: discoloration, indentation, loss of bond, and delamination.

NOTE: The use of lauan plywood and other extremely porous wood underlayments will reduce the flash and working time of adhesives. It is best to apply an acrylic-based primer-sealer to any porous substrate prior to installing Metroflor LVT. A manufacturer's certification of lauan grade must accompany any claim involving the use of a lauan underlayment.

Unapproved Substrates

Remove the floors listed below and refer to the appropriate "General Conditions" subsection under the "Concrete Subfloors" and "Wood Subfloors" sections (pages 4-6). For glued-down floors, remove old adhesive before installing Metroflor LVT. Encapsulate adhesive and cutback residue. Any appearance- or performance-related issues associated with the underlayment are the responsibility of the flooring contractor and/or underlayment manufacturer.

UNAPPROVED SUBSTRATES

- Asphalt Tile
- Carpeting/Carpet Pad
- Cementitious Tile Backer Boards
- Chipboard
- Cushion-Back Sheet Vinyl
- Floating Floors
- Glass Mesh Tile Boards
- Hardboard
- Hardwood
- Hardwood - Engineered
- Hardwood Over Concrete
- Masonite
- OSB
- Parquet
- Particleboard
- Plywood- Fire- Retardant
- Plywood - Knotty
- Plywood - Preservative-Treated / Treated
- Rubber Tile
- Self-Stick Tile
- Sleeper Substrates
- Strip Wood

NOTE: Various Federal, State, and Local government agencies have regulations governing the removal of in-place asbestos-containing material. If you contemplate the removal of a resilient floor covering structure that contains (or is presumed to contain) asbestos, you must review and comply with all applicable regulations. 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. Smoking by individuals exposed to asbestos fibers greatly increases the risk of 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. RFCI's Recommended Work Practices for Removal of Resilient Floor Covering are a defined set of instructions addressed to the task of removing all resilient floor covering structures. For further information, visit the Resilient Floor Covering Institute website at www.rfci.com.

OTHER SUBFLOORS

General Conditions

It is always best practice and recommended to remove existing flooring and start new with the original base. Recognizing that there are certain situations in which this is not possible, existing flooring materials such as terrazzo, marble, ceramic tile, or quarry tiles may be a suitable substrate for Metroflor LVT if properly prepared. Note: Special attention in the preparation of these substrates must be taken. Consult with substrate preparation material supplier for appropriate material selections, application requirements, and warranty information.

General Conditions (cont.)

The responsibility of the assessment, determination, and selection of the substrate preparation material, along with application and product performance, rests with the applicator and preparation material provider.

Terrazzo and Stone Subfloors: These materials are porous and allow moisture to pass through. As such, the subfloor must be tested for moisture and pH, as outlined in the "Moisture and Alkalinity" subsection under "Concrete Subfloors" (page 5). If the moisture and pH do not meet the tolerances of the appropriate Prevail adhesive (refer to chart on page 8), moisture mitigation is required. Any loose or damaged tiles must be repaired or removed. Thoroughly clean the surface to remove all old sealants, varnishes, oil, grease, wax, or finishes. Roughen smooth or glazed surfaces to provide a mechanical key for self-leveling compounds or preparation materials. Follow the manufacturer's recommendations for such preparation materials.

Existing Resilient Floors: Metroflor LVT by Metroflor may be installed over a **single layer** of existing resilient flooring, on-grade and suspended moisture-free substrates (never below grade), when properly prepared. Never install over existing cushion vinyl, rubber, or slip-retardant flooring. The existing material must be fully and firmly bonded to an approved subfloor or underlayment. All polishes, waxes, floor finishes, and contaminants must be properly stripped. Indented or damaged areas must be replaced or repaired. Use appropriate patching, repair or embossing levelers.

Embossing Levelers: Use embossing levelers on sheet goods with textures that could telegraph through Metroflor LVT flooring. Self-leveling compounds must fully cure according to manufacturer's instructions before installing Metroflor LVT flooring. The flooring contractor is fully responsible for moisture and leveler-related issues. Note: The use of embossing levelers on sheet goods will not create a porous subfloor.

Metal Substrates: Metroflor LVT flooring may be installed directly over steel, stainless steel, aluminum, and lead substrates using the appropriate Prevail adhesive. These types of substrates must be thoroughly cleaned, dried and free of dust, dirt, wax, paint, grease, or any other contaminates that may interfere with the adhesive bond. The surface may require cleaning with mineral spirits to remove oil or grease prior to abrading or lightly sanding the surface to achieve a satisfactory bond. A bond test should be performed prior to installation. Metal substrates require the non- porous application method. Due to the softness of lead, it is recommended that it be coated with a minimum of 1/8" cement-based underlayment. While this may not be a requirement for thin applications of lead, it must be understood that lead will indent quite easily. A bond test should be performed prior to installation. Contact Metroflor LVT Customer Service for details

Polymeric Poured Floors: These type of floors are generally two-part, resin-based, epoxy paints or coatings. It's very difficult to tell whether or not they are well bonded to the substrate and are subject to issues with excessive moisture. Thus, it is recommended that polymeric poured floors be removed, so as to avoid potential problems.

SPECIAL CONSIDERATIONS

Radiant Heat: Radiant heating systems must be cast ½" below the surface of the concrete slab, and should be operating at least 2 weeks before installing Metroflor LVT flooring. Set the temperature of the radiant heating system to 68°F 48 hours before, at all times during, and 72 hours after installation. The temperature of the radiant heat floor may be gradually increased 72 hours after installation, but the surface temperature should never exceed 85°F. **Note: For best performance it is recommended to use Prevail 4000 Two-Part Epoxy Adhesive over floors with radiant heating.**

Removal of Existing Resilient Flooring - Asbestos Abatement: Metroflor recommends following the Resilient Floor Covering Institute Guidelines for removal of existing tile and mastic. Existing resilient flooring and adhesive should be mechanically removed. The use of adhesive removers or solvents is strictly prohibited. Any mastic remover residue including Soy or Citrus products can attack and break down the new adhesive, resulting in tiles releasing from the subfloor. Floor covering warranties do not cover instances where adhesive removers or solvents cause damage to the flooring or installation failure.

Concrete Curing, Sealing, Hardening or Parting Compounds: Metroflor Corporation recommends wet-curing concrete for seven days, if at all possible. This will prevent the need to use curing, sealing, hardening, or parting compounds. Curing compounds leave a film that can interfere with the adhesion of floor coverings, and thus their use should be avoided. Some contain wax, soap, oils, or silicones, and must be removed prior to installing resilient flooring. Mechanically remove compounds by using a concrete or terrazzo grinder, or by shot-blasting. Some materials are advertised as being "dissipative," but should not be taken for granted. Always conduct bond tests to determine the need for removal (see "Adhesive Bond Testing" section, directly below).

ADHESIVE BOND TESTING

Use the following test to determine if a subfloor is compatible for use with Prevail adhesives, or to determine if the porous or non-porous adhesive application method is required: Using the flooring and adhesive suitable for the subfloor, install a 3′ x 3′ section following the recommended installation procedures. Tape the edges with duct tape to prevent the adhesive from prematurely drying. Select light traffic areas, such as those located next to walls or columns. The adhesive should be dry and the flooring should be difficult to remove after 48 hours. Note: the adhesive is dry at this point, but not cured. Full cure and maximum bond will not occur for 6-8 days. On large installations, tests should be performed every 50 linear feet.

PREVAIL ADHESIVES

PREVAIL Product	PR-3500	PR-4000	PR-6000
Product Type	Hard Set	Two-Part Epoxy	PSA
Usage	LVT	LVT	LVT
pH Tolerance	7 - 10	7 - 10	7 - 10
ASTM F2170 - RH Limits	85%	85%	90%
ASTM F1869 - MVER	6lbs	6lbs	8lbs
Spread Rate and Trowel (Porous)	125-150 sf/g – 1/16" 1/16"x1/16" Sq-notch	165-200 sf/g –1/16" 1/16"x1/16" Sq-notch	160-180 sf/g –1/16" 1/16"x1/16" Sq-notch
Spread Rate and Trowel (Non-Porous)	165-200 sf/g – 1/16" 1/16"x1/16" V-notch	225-250 sf/g –1/32" 1/16"x1/32" U-notch	220-260 sf/g – 1/16" 1/32"x1/32" U-notch
Shelf Life (in Unopened Properly Stored Containers)	1 year	1 year	2 year
LEED	Yes	Yes	Yes
Floorscore Certified	Yes	Yes	Yes

General Information:

Metroflor offers four adhesive options for use with Metroflor LVT flooring. Areas of usage and subfloor conditions determine the appropriate Prevail adhesive. For areas with high point loads, rolling loads, topical spillages, radiant heat or direct sunlight only use Prevail 4000 Two Part Epoxy. Select and use the proper trowel per the chart below. Always use new trowels to ensure proper adhesive coverage.

Important: Only Prevail Adhesives are approved and warranted for use with Metroflor LVT Tile and Plank by Metroflor Corporation. Bond issues resulting from the use of non- recommended adhesives are not warranted. All warranties and guarantees pertaining to the suitability and performance of any product not recommended by Metroflor Corporation rests with the material manufacturer or the installation contractor and NOT with Metroflor Corporation. The condition of the subfloor and bond issues resulting from the use of non-recommended, improper, or incorrectly prepared adhesives, sealers, embossing levelers, patches, concrete, gypsum-based products and other such items, are the sole responsibility of the Flooring Contractor and/or manufacturer of the particular sub-flooring product.

PREVAIL 3500 HARD SET ADHESIVE

Prevail 3500 is a solvent-free, hard setting acrylic adhesive that is designed to permanently install dimensionally stable homogenous & heterogeneous sheet flooring, luxury vinyl tile and vinyl plank. It is also formulated to provide an exceptional bond when installing over moisture-free porous and non-porous surfaces. It can be used on all grades of concrete including on grade, above or below grade, in the absence of moisture, as well as on suspended approved wood floors (APA).

APPLICATION AND INSTALLATION

The installation site must be acclimated with HVAC in operation. The floor and room temperature, as well as flooring materials and adhesive, must be maintained at 65° to 85°F, and the ambient RH (relative humidity) must be maintained between 35% and 85% for 48 hours before, during, and continuously after the testing and installation. Spread the adhesive uniformly with recommended trowel as noted below. Place flooring into the adhesive once the adhesive has reached the appropriate amount of drying time. The amount of time in which you have to place the flooring will vary with temperature and humidity. The higher the temperature and the lower the humidity, the faster the adhesive will set.

Porous Substrates: 1/16" x 1/16" x 1/16" Square notch trowel= 125-150sf/gallon.

On absorbent substrates vinyl plank and tile flooring may be installed while adhesive is wet or as it becomes dry to touch, with little to no transfer to finger. This may require approximately 5-10 minutes of drying time at suggested installation temperature and humidity. If installing into wet adhesive, work off of the material to prevent planks or tiles from moving, adhesive displacement and adhesive from oozing to the surface of the material. Roll the installation in both directions with a 100lb 3-section roller immediately after flooring is placed, ensuring full contact with adhesive.

Non-Porous Substrates: 1/16" x 1/16" x 1/16" V-notch trowel= 165-200sf/gallon.

On nonabsorbent substrates install vinyl plank and vinyl tile flooring into adhesive as it becomes dry to the touch, with little or no transfer to finger. This may require approximately 45-55 minutes of drying time at suggested installation temperature and humidity. Do not install flooring into wet adhesive. Roll the installation in both directions with a 100lb 3-section roller immediately after flooring is placed, ensuring full contact with adhesive.

CLEAN UP: Remove wet adhesive with soapy water on a clean cloth. Remove dry adhesive with mineral spirits applied to a clean, lint-free cloth. Do not allow excessive amounts of soapy water or solvents to sit on the vinyl or penetrate the seams of the flooring. NEVER APPLY SOLVENT DIRECTLY TO FLOORING.

AFTER INSTALLATION: Restrict foot traffic for 24 hours and the movement of heavy rolling loads and heavy objects for 48 hours to allow adhesive to cure properly. Premature traffic can cause installation failure.

Recommended Trowels: For flooring materials with a smooth or lightly textured back use a 1/32" x 1/16" x 1/32" U-notch trowel. For flooring materials with a textured back use a 1/16" x 1/16" x 1/16" V-notch trowel. Substrate conditions and material backing must be taken into consideration. The least amount of adhesive should be used to get full transfer to the backing without adhesive bleeding to the surface of the material. A simple bond test can be performed to help make this determination.

When installing vinyl plank and tile, place into adhesive while wet. The pot life for the adhesive is 30-45 minutes so remove material from the container immediately once thoroughly mixed. High temperatures will decrease pot life. The adhesive working time is approximately 50-60 minutes. 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 100lb 3-section roller immediately after the installation is complete. Then, before adhesive sets, between 1-2 hours depending on ambient room conditions, roll the installation again in both directions with a 100lb 3-section roller.

CLEAN UP: Remove excess adhesive before it cures with isopropanol or mineral spirits applied to a clean, lint-free cloth. Do not allow solvents to sit on the flooring or penetrate the joints. NEVER APPLY SOLVENT DIRECTLY TO FLOORING.

AFTER INSTALLATION: Restrict foot traffic for 24 hours and the movement of heavy rolling loads and heavy objects for 48 hours to allow adhesive to cure properly. Premature traffic can cause installation failure.

PHYSICAL CHARACTERISTICS: (70°F, 50% RH): Flash Time: 0 minutes. Working Time: 50-60 minutes at standard temperature and humidity.

MAXIMUM MOISTURE TOLERANCE: ASTM F2170: 85% RH or less ASTM F1869: 6lbs or less MVER.

STORAGE: Protect from freezing.

SHELF LIFE: 1 year in unopened container when stored at standard conditions.

PREVAIL 4000 2-PART EPOXY ADHESIVE

Prevail 4000 is a solvent free, low VOC, high performance 2-part epoxy adhesive system recommended for the installation of sheet vinyl, luxury vinyl tiles and planks, rubber sheet flooring, rubber tile, rubber stair treads and composition tile (VCT). It is excellent for use in health care facilities and commercial installations where heavy fixtures or rolling loads will be used.

APPLICATION AND INSTALLATION

The installation site and materials must be acclimatized with HVAC in operation. The floor and room temperature, as well as flooring materials and adhesive, must be maintained at 65° to 85°F, and the ambient RH must be maintained between 35% and 55% RH for 48 hours before, during, and continuously after the testing and installation. Mix entire contents of Part B into the Part A container using a low speed mixer and paddle for 3-5 minutes until uniform in color without streaking. Adhesive will not cure if not thoroughly mixed. After mixing, immediately apply the adhesive to the substrate and do not allow mixed product to sit in the container. Wash all tools with isopropanol or mineral spirits immediately after mixing. Trowel selection is based upon the condition of the substrate and material backing (see below). Spread the adhesive uniformly with appropriate trowel and place flooring immediately into wet adhesive while working off the flooring material. Under normal temperature and humidity conditions (70°F, 50% RH) the adhesive working time will be 50-60 minutes. Check for full adhesive transfer to the back of the floor covering. The amount of time in which you have to place the flooring will vary with temperature and humidity. The higher the temperature and the lower the humidity, the faster the adhesive will set. After placing sheet flooring into the adhesive, and prior to rolling with the 100lb. 3 section roller, a push board should be used to push out any air bubbles that might be trapped. The roller alone may not be adequate in removal of trapped air bubbles due to subfloor irregularities or setting of adhesive. Once placed, roll the flooring immediately in both directions using a minimum 100 lb. 3-section roller. Roll again before the adhesive sets, generally 1-2 hours. Avoid direct sun exposure or direct exposure from any heat source during installation to prevent the adhesive from setting too quickly.

Recommended Trowels: For flooring materials with a smooth or lightly textured back use a 1/32" x 1/16" x 1/32" U-notch trowel. For flooring materials with a textured back use a 1/16" x 1/16" x 1/16" V-notch trowel. Substrate conditions and material backing must be taken into consideration. The least amount of adhesive should be used to get full transfer to the backing without adhesive bleeding to the surface of the material. A simple bond test can be performed to help make this determination.

When installing vinyl plank and tile, place into adhesive while wet. The pot life for the adhesive is 30-45 minutes so remove material from the container immediately once thoroughly mixed. High temperatures will decrease pot life. The adhesive working time is approximately 50-60 minutes. 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 100lb 3-section roller immediately after the installation is complete. Then, before adhesive sets, between 1-2 hours depending on ambient room conditions, roll the installation again in both directions with a 100lb 3-section roller.

CLEAN UP: Remove excess adhesive before it cures with isopropanol or mineral spirits applied to a clean, lint-free cloth. Do not allow solvents to sit on the flooring or penetrate the joints. NEVER APPLY SOLVENT DIRECTLY TO FLOORING.

AFTER INSTALLATION: Restrict foot traffic for 24 hours and the movement of heavy rolling loads and heavy objects for 48 hours to allow adhesive to cure properly. Premature traffic can cause installation failure.

PHYSICAL CHARACTERISTICS: (70°F, 50% RH): Flash Time: 0 minutes. Working Time: 50-60 minutes at standard temperature and humidity.

MAXIMUM MOISTURE TOLERANCE: ASTM F2170: 85% RH or less ASTM F1869: 6lbs or less MVER.

STORAGE: Protect from freezing.

SHELF LIFE: 1 year in unopened container when stored at standard conditions.

PREVAIL 6000 PRESSURE SENSITIVE VINYL ADHESIVE

Prevail 6000 with post consumer content is designed for the installation of luxury vinyl plank and tiles. Prevail 6000 may be used over both porous and non-porous substrates using the appropriate application methods allowing trouble-free installations over existing, well-prepared substrates with a maximum moisture limit of 90% RH and 8 lb. MVER.

APPLICATION AND INSTALLATION

The installation site must be acclimatized with HVAC in operation. The floor and room temperature, as well as flooring materials and adhesive, must be maintained at 65°to 85°F, and the ambient RH (relative humidity) must be maintained between 35% and 85% for 48 hours before, during, and after the testing and installation. Spread the adhesive uniformly with recommended trowel as noted below. Place flooring into the adhesive once the adhesive has reached the appropriate amount of drying time. The amount of time in which you have to place the flooring will vary with temperature and humidity. The higher the temperature and the lower the humidity, the faster the adhesive will set.

Porous Substrates: 1/16" x 1/16" x 1/16" Square notch trowel= 160-180sf/gallon.

Install vinyl plank and vinyl tile flooring into adhesive as it becomes dry to the touch, with no transfer to finger, approximately 10-20 minutes of drying time at suggested installation temperature and humidity. On absorbent (porous) substrates the flooring may be installed dry to touch or while still wet after the adhesive valleys begin to go clear. Roll the installation in both directions with a 100lb 3-section roller immediately after flooring is placed, ensuring full contact with adhesive.

Non-Porous Substrates: 1/32" x 1/16" x 1/32" U-notch trowel= 220-260sf/gallon.

Install vinyl plank and vinyl tile flooring into adhesive as it becomes dry to the touch, with no transfer to finger, approximately 30-60 minutes of drying time at suggested installation temperature and humidity. Do not install flooring into wet adhesive. Roll the installation in both directions with a 100lb 3-section roller immediately after flooring is placed, ensuring full contact with adhesive.

Prevail GDP:

A) For Prevail™ GDP installations, trowel or roll the adhesive uniformly onto the substrate by utilizing the appropriate directions noted above for porous and non-porous substrates. Roll the GDP installation with a 100lb 3-section roller after installation.

B) Never use a trowel to apply adhesive to the GDP. Only roll the adhesive uniformly to the underlayment using a 3/8" nap roller (replaced as needed). Coverage for this application method should be approximately 350-400 sf/gallon. Do not install flooring into wet adhesive. Begin installation when adhesive shows no transfer to the finger. Roll the installation in both directions with a 100lb 3-section roller immediately after installation is complete, ensuring full contact with adhesive

CLEAN UP: Remove wet adhesive with soapy water on a clean cloth. Remove dry adhesive with mineral spirits applied to a clean, lint-free cloth. Do not allow excessive amounts of soapy water or solvents to sit on the vinyl or penetrate the seams of the flooring. NEVER APPLY SOLVENT DIRECTLY TO FLOORING.

AFTER INSTALLATION: Restrict foot traffic for 24 hours and the movement of heavy rolling loads and heavy objects for 48 hours to allow adhesive to cure properly. Premature traffic can cause installation failure.

PHYSICAL CHARACTERISTICS: (70ºF, RH 50%) Drying Time (Porous): Approx. 10-20 minutes. Drying Time (Non-Porous): Approx. 30-60 minutes. Working Time: Up to 4 hours. Product Type: Acrylic latex. Product size/package: 1 gallon and 4 gallon pails.

MAXIMUM MOISTURE TOLERANCE:

ASTM F2170: 90% or less

ASTM F1869: 8lbs or less

pH: 7-10.

STORAGE: Protect from freezing.

SHELF LIFE: 1 year in unopened container.

INSTALLATION

GENERAL INFORMATION

Before starting the installation, verify that the material is of the correct style, color, quantity, and run numbers, and ensure that the correct adhesive has been selected for area of usage (see "Prevail Adhesives" section; starts on page 8). Also, confirm that all pre-installation requirements, as detailed in the remainder of this section, have been satisfactorily completed. Start of flooring installation indicates acceptance of current subfloor conditions and full responsibility for completed work.

CHECK RUN NUMBERS AND MANUFACTURE DATE

Locate the run number on the short end of each carton and verify that all of the material for your job is from the same run. Minor shade variations within the same run number contribute to the natural look of Metroflor LVT. To avoid noticeable shade variations, do not install material from different runs across large expanses.

To determine manufacture date, locate the run number on the short end of the carton. It is the eight-digit number separated by decimal points beginning with the two-digit day, then the two-digit month, and finally the four-digit year.

Run Number/Manufacture Date
29.10.2013
DAY.MONTH.YEAR

- Acclimate tiles (keep cartons flat), adhesive, jobsite, and subfloor to a stable condition between 65°-85°F (18°-29°C) and 35%- 85% RH for a minimum of 48 hours before and after installation.
- Confirm quantity of Metroflor LVT flooring and adhesive are sufficient for area to be installed. Check material for visual defects before installation. Installation of flooring acknowledges acceptance of materials.
- Make sure all surfaces to be covered are completely clean, dry, and smooth, and that all necessary subfloor preparation has been properly completed and documented.
- Perform final acceptance inspection of substrate.
- Protect adjacent work areas and finished surfaces from damage that could occur during product installation.
- Metroflor LVT should be the last material installed, so as to prevent other trades from disrupting the installation and adhesive set-up, and to prevent damage to the floor.

Metroflor LVT comes in plank, rectangular, and square tile formats. Install tiles running in the same direction (block or staggered), quarter-turned or as specified by architect. Metroflor LVT plank flooring should have end-joints offset by at least 6" and should be installed in a staggered manner, so as to create a random appearance that avoids alignment of end-joints. Metroflor LVT can be laid out to run either parallel or diagonal to the room or primary wall. The following conditions must be given consideration when determining how Metroflor LVT will be installed:

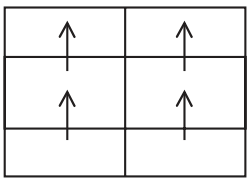
Layout: Layout shall be specified by the architect, designer or end user (refer to architectural drawings).

- Establish center lines and determine starting point to balance the installation by having equal tile widths on opposite sides of room. This can be facilitated by measuring or dry-laying tiles and marking baselines.
- **Wet-Set Applications (Prevail 3500 & Prevail 4000)**: The room layout must be arranged so that all flooring can be installed while working off of freshly installed tiles. This will keep tiles from shifting, minimize adhesive displacement, and prevent wet adhesive from oozing up and getting onto the surface of the tiles. This can be accomplished by snapping chalk lines to create work zones that are no wider than a comfortable arm's reach, and in multiples of the tile or plank width. Periodically pull back a tile or plank during installation and check for adhesive transfer to backing.
- When all preparatory work is satisfactorily completed, including dry fitting cut tiles (if applicable), proceed with installation. Inspect each tile for visual defects before installing. Installation of flooring implies acceptance of materials.
- **Protecting Newly Installed Floors:** Newly installed flooring must be protected while the adhesive sets, and also protected from damage of other trades. Early foot traffic, as well as point or rolling loads, can cause shifting of tiles, adhesive displacement, or breaking of the bond between the adhesive and the tile or substrate.

Always start with a clean jobsite. All trades must finish before installing Metroflor LVT. Carefully inspect each plank or tile for defects prior to installation, and do not install damaged material. Be sure to check run numbers/manufacture dates prior to installing.

METROFLOR LVT RESILIENT TILE INSTALLATION

All Metroflor LVT products have directional arrows on the back. All Metroflor LVT tiles should be installed with the arrows pointing in the same direction in order to prevent shade, color, or gloss variation. Metroflor LVT planks may be installed randomly (without concern for arrow direction). This will bring out more variety in the appearance of the installed floor.



STEP 1: SQUARE THE ROOM

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 center line on the floor. Then, measure along this center line to find the middle of the room. At the center point, mark off a line across the room at precise right angles to the first line This can be accomplished using the 3-4-5 triangle method. 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. (See Figure 1)

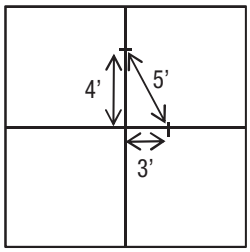


Figure 1

TIP: Multiples of the 3-4-5 triangle method may be used for greater accuracy in large rooms (e.g. 6-8-10, 9-12-15, etc.).

STEP 2: BALANCE THE ROOM

Either measure or dry-lay a row of tiles from the center line to the side wall to determine the size of the first and last tiles. If the resulting border is too small in either direction, move the row of tiles over one-half tiles' width and snap a new line. This becomes your new starting line. (See Figure 2)

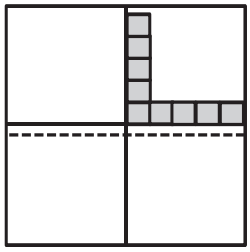


Figure 2

TIP: Use the dimensions of the room to calculate the size of the first tile without dry-laying.

STEP 3: INSTALL THE TILES

After determining the layout and snapping center line, spread adhesive and install flooring as outlined below using the dry to touch or wet-set application method. (See Figure 3)

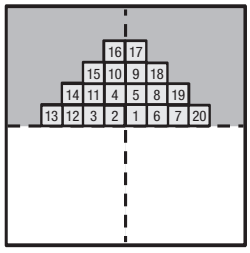


Figure 3

Apply adhesive as recommended on the label.

Pressure Sensitive (dry-to-touch) Applications: Lay tiles from the center of the room in a pyramid fashion while working towards the walls as shown in Figure 3. The dry, tacky adhesive makes it possible to work on top of the material without compromising the installation.

Wet-Set Applications: The room layout must be set-up so that all flooring can be installed while working off of freshly installed tiles. This will keep tiles from shifting, minimize adhesive displacement, and prevent wet adhesive from oozing up and getting onto the surface of the tiles. This can be accomplished by creating work zones outlined with parallel chalk lines. Create work zones that are no wider than the installer's comfortable arm reach and in multiples of the tile width. Measure and snap chalk line parallel to the established base line. Spread adhesive within the work zone, and begin installing tiles using the row-by-row method, as shown in Figure B under "Metroflor LVT Resilient Plank Installation" (next section).

TIP: Do not apply more adhesive than can be worked within the recommended working time. Always follow the adhesive manufacturer's recommendations.

IMPORTANT: All Metroflor LVT flooring must be rolled with a minimum 100lb roller after installation. Use a hand roller in areas that cannot be reached with a 100lb roller.

METROFLOR LVT RESILIENT PLANK INSTALLATION

STEP 1: SQUARE THE ROOM

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 center line on the floor. Then, measure along this center line to find the middle of the room. At the center point, mark off a line across the room at precise right angles to the first line. This can be accomplished using the 3-4-5 triangle method. 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. (See Figure A)

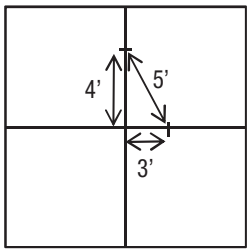


Figure A

TIP: For large rooms, multiples of the above dimensions may be used to obtain greater accuracy. (6-8-10, 9-12-15, and so on.)

STEP 2: INSTALL THE PLANKS

After snapping the center starting chalk lines, spread the appropriate Prevail adhesive on the center lines, leaving portions of the lines at center and near each wall uncovered. Start laying the planks from the right angle formed by the center lines. 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 plank is flush against the chalk line and tight against the adjoining plank. The ends of the planks should align perfectly. Lay row-by-row or in pyramid fashion (See Figures B & C).

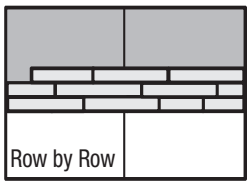


Figure B

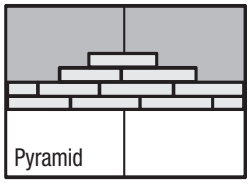


Figure C

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

IMPORTANT: All Metroflor LVT flooring must be rolled with a minimum 100lb roller after installation. Use a hand roller in areas that cannot be reached with a 100lb. roller.

GLOSSARY

ABOVE-GRADE LEVEL: A suspended floor that is located above the surface of the ground and typically found over a basement, crawl space, or upper floors in a multi-story building. Resilient flooring requires a suspended floor to be over a well-ventilated air space with at least 18 inches between the bottom of the lowest horizontal structural member and any point of the ground.

ABSORPTION: Soaking up; the uptake of liquid into the fibers of a substance. A taking in or reception by molecular or chemical action, as of gases or liquids.

ACCLIMATION: The act of allowing (flooring) material to achieve equilibrium with the environment in which it will perform.

ACI: American Concrete Institute - a trade organization of the concrete industry.

ADHESION: The property that causes two dissimilar materials to stick to one another. Forces and mechanisms related to the forces created by intermolecular interactions, chemical bonds anchoring mechanisms by roughness, adsorption and diffusion. Adhesion is affected by the condition of the surfaces to be coated and by the closeness of contact, as well as by the molecular forces of the unlike substances. Thus, the surface should allow a certain amount of penetration, should be clean and not too smooth, hard or nonporous for good adhesion.

ADHESIVE BLEEDING: Undesired migration of the adhesive to the surface of the floor between tile joints.

ADHESIVE: Any substance applied to the surfaces of materials that binds them together and resists separation. The term “adhesive” may be used interchangeably with “glue,” “cement,” or “paste”.

AIR BUBBLES: Pockets of air (large or small) trapped under flooring. The appearance of such bubbles shortly after installation is usually indicative of premature placement of flooring into the adhesive or of improper rolling of the flooring, while their appearance at a later time is often the result of moisture in the subfloor.

ALKALI: A soluble mineral salt present in some soil and natural water.

ALKALINE SALTS: Diluted salts that are carried to the surface of a concrete subfloor by water coming up from the ground below. Moisture and alkali can cause the following problems after installation: Adhesive and adhesive bond deterioration, bumps, bubbles or ridges, color change, microbial growth (mold and mildew growth), efflorescence (alkali can build-up at the tile joints and floor perimeter), tile shifting, peaking or curling, shrinkage and joints opening of the tile or sheet flooring. There is no guarantee any treatment to the concrete will keep the surface free of alkali, but washing the surface with clear water or soda water will lower the alkalinity. Traditionally, muriatic acid has been used, but it too may leave behind residue, which can adversely affect the flooring installation.

ALKALINITY: A measurement of alkaline rated above 7 on the pH scale.

ASTM: ASTM International, known until 2001 as the American Society for Testing and Materials (ASTM), is an international standards organization that develops and publishes voluntary consensus technical standards for a wide range of materials, products, systems, and services.

BELOW-GRADE LEVEL: Below ground level (partially or completely); below the surrounding ground level and in direct contact with the ground or with fill which is in direct contact with the ground. Presence of moisture is assumed, and the subfloor must be tested to determine the moisture level.

BEVELED EDGE: Refers to an edge of a structure that is not perpendicular to the faces of the piece. Chamfered or beveled edge of such strip flooring, plank, block, parquet, resilient tile or plank.

BOND TEST: A 72-hour test that determines if resilient flooring can be adhered to the subfloor with the recommended adhesive. A properly conducted bond test will: determine whether the adhesive is compatible with the subfloor; detect the presence (or absence) of moisture; and determine the compatibility of the adhesive with sealers, curing agents, and other foreign matter, as well as the necessity of their removal.

BOND: The adherence of one material to another; the adhesion between two dissimilar materials.

CEMENT: A binding substance that sets and hardens as it dries, and dependently reacts with carbon dioxide in the air. Cement is also used to bind other materials together. The most common use for (Portland) cement is in the production of concrete.

CEMENTITIOUS: Having the properties of cement or being made of cement.

CLEANING: The removal of dirt, dust, grit and other extraneous or foreign materials from a surface.

COMMERCIAL FLOORING: Floors designed for installation in commercial settings, such as: hospitals, schools, public buildings, and institutions. Also referred to as “contract flooring.”

COMPRESSIVE STRENGTH: The ability of a material, such as concrete, to withstand loads. Compressive strength is measured in pounds per square inch (PSI). If the compressive strength is 3500 psi, it means the subject material will withstand a load up to 3500 pounds per square inch without breaking down.

CONCRETE-CURING COMPOUND: Compounds applied to new concrete to seal-in water for curing. This makes it possible to get onto the concrete relatively quickly. Traditionally, slabs were kept wet for curing by such means as: wet straw, burlap, plastic film, etc. This kept the concrete wet for the 28-day "wet cure" period, but did not allow for use of the slab during the curing period. A bond test should always be conducted to determine the compatibility of the adhesive to the curing agents/compounds. Curing compounds must be removed in areas where calcium chloride tests are being run. Curing agents need to be removed when moisture testing fails, so as to allow the concrete to dry.

CONCRETE CURING: The curing of concrete is a reaction between the type of cement in the concrete and the water. This reaction between cement and water is known as hydration. When the concrete sets and gains strength through this hydration process, it is known as curing. Test cylinders of concrete for construction projects are placed in a curing room, where they are continuously misted with water at 23 ± 2°C for 7 days and 28 days before testing. Such testing helps ensure adequate curing.

CONCRETE HARDENER: An admixture, such as calcium chloride, sodium chloride, or sodium hydroxide, that hastens or decreases the hydration rate of cementing material; the concrete takes less time to set and has earlier, higher strength. Bond tests should be conducted before installing resilient flooring.

ABOVE-GRADE LEVEL: A suspended floor that is located above the surface of the ground and typically found over a basement, crawl space, or upper floors in a multi-story building. Resilient flooring requires a suspended floor to be over a well-ventilated air space with at least 18 inches between the bottom of the lowest horizontal structural member and any point of the ground.

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ALKALINE SALTS: Diluted salts that are carried to the surface of a concrete subfloor by water coming up from the ground below. Moisture and alkali can cause the following problems after installation: Adhesive and adhesive bond deterioration, bumps, bubbles or ridges, color change, microbial growth (mold and mildew growth), efflorescence (alkali can build-up at the tile joints and floor perimeter), tile shifting, peaking or curling, shrinkage and joints opening of the tile or sheet flooring. There is no guarantee any treatment to the concrete will keep the surface free of alkali, but washing the surface with clear water or soda water will lower the alkalinity. Traditionally, muriatic acid has been used, but it too may leave behind residue, which can adversely affect the flooring installation.

ALKALINITY: A measurement of alkaline rated above 7 on the pH scale.

ASTM: ASTM International, known until 2001 as the American Society for Testing and Materials (ASTM), is an international standards organization that develops and publishes voluntary consensus technical standards for a wide range of materials, products, systems, and services.

BELOW-GRADE LEVEL: Below ground level (partially or completely); below the surrounding ground level and in direct contact with the ground or with fill which is in direct contact with the ground. Presence of moisture is assumed, and the subfloor must be tested to determine the moisture level.

BEVELED EDGE: Refers to an edge of a structure that is not perpendicular to the faces of the piece. Chamfered or beveled edge of such strip flooring, plank, block, parquet, resilient tile or plank.

BOND TEST: A 72-hour test that determines if resilient flooring can be adhered to the subfloor with the recommended adhesive. A properly conducted bond test will: determine whether the adhesive is compatible with the subfloor; detect the presence (or absence) of moisture; and determine the compatibility of the adhesive with sealers, curing agents, and other foreign matter, as well as the necessity of their removal.

BOND: The adherence of one material to another; the adhesion between two dissimilar materials.

CEMENT: A binding substance that sets and hardens as it dries, and dependently reacts with carbon dioxide in the air. Cement is also used to bind other materials together. The most common use for (Portland) cement is in the production of concrete.

CEMENTITIOUS: Having the properties of cement or being made of cement.

CLEANING: The removal of dirt, dust, grit and other extraneous or foreign materials from a surface.

COMMERCIAL FLOORING: Floors designed for installation in commercial settings, such as: hospitals, schools, public buildings, and institutions. Also referred to as "contract flooring."

COMPRESSIVE STRENGTH: The ability of a material, such as concrete, to withstand loads. Compressive strength is measured in pounds per square inch (PSI). If the compressive strength is 3500 psi, it means the subject material will withstand a load up to 3500 pounds per square inch without breaking down.

CONCRETE-CURING COMPOUND: Compounds applied to new concrete to seal-in water for curing. This makes it possible to get onto the concrete relatively quickly. Traditionally, slabs were kept wet for curing by such means as: wet straw, burlap, plastic film, etc. This kept the concrete wet for the 28-day "wet cure" period, but did not allow for use of the slab during the curing period. A bond test should always be conducted to determine the compatibility of the adhesive to the curing agents/compounds. Curing compounds must be removed in areas where calcium chloride tests are being run. Curing agents need to be removed when moisture testing fails, so as to allow the concrete to dry.

CONCRETE CURING: The curing of concrete is a reaction between the type of cement in the concrete and the water. This reaction between cement and water is known as hydration. When the concrete sets and gains strength through this hydration process, it is known as curing. Test cylinders of concrete for construction projects are placed in a curing room, where they are continuously misted with water at 23 ± 2°C for 7 days and 28 days before testing. Such testing helps ensure adequate curing.

CONCRETE HARDENER: An admixture, such as calcium chloride, sodium chloride, or sodium hydroxide, that hastens or decreases the hydration rate of cementing material; the concrete takes less time to set and has earlier, higher strength. Bond tests should be conducted before installing resilient flooring.

CONCRETE SEALER: Typically a finish coating used to protect concrete floors from traffic and surface cleaning. Concrete sealers should not be used when the slab is intended as a substrate for resilient flooring. Sealers are designed to prevent water and dirt from getting into the concrete from the surface, and render the concrete less porous. Sealers may interfere with the bonding of adhesives, and thus a bond test should be run to determine their compatibility with the adhesive to be used.

CONCRETE: A mixture of Portland cement, water, fine aggregate, and coarse aggregate. Concrete is bound together by the Portland cement and water paste, which surrounds the aggregate and fills the spaces between particles.

CONTRACTION JOINTS: Also referred to as "control joints" or "saw cuts", contraction joints are placed in fresh concrete before it has a chance to create its own joints—also known as cracks. Contraction joints are formed by either: saw cutting, tooling a joint with a grooving tool, or inserting a plastic strip into the concrete during finishing (zip-strip). Ultimately, a contraction joint is simply a crack in the slab that is forced to follow a line of one's own choosing by creating a weakened line across the slab and then letting nature take its course. "Joint activation" occurs when the slab finally cracks.

CUTBACK ADHESIVES: Refers to asphalt adhesives which have been liquefied with petroleum solvents. When the lighter fractions are boiled away from petroleum oil, the thick residue left is asphalt. To make it fluid again, solvent is added and the asphalt is called "cutback." Some old cutback adhesives may contain asbestos, and thus proper care must be taken when removing old material. Refer to RFCI website and/or follow local removal laws or regulations.

DAMP MOPPING: Procedure involving the removal of fine dust, grit, and spills from the floor surface with a mop that has been dampened with a neutral detergent solution. When performed daily, this procedure helps to control grit and can reduce time and money spent on more intensive maintenance procedures.

DRY FITTING: A procedure where the first couple of rows of flooring are placed together, without glue, to determine proper layout orientation and starting point for the continuation of the remaining floor.

EMBOSSING: A permanent, multi-level surface texture pressed into the surface of resilient flooring. Embossing is produced by mechanical pressing between engraved sheet dyes or engraved rollers during manufacturing. Embossing provides a three- dimensional appearance that helps replicate realistic visuals, such as wood graining. It also prolongs gloss retention, as only the high points of the embossing are subjected to surface abrasion.

END JOINT: The place where two pieces of flooring are joined together end-to-end.

EPOXY ADHESIVE: A very strong, two-part thermo-setting adhesive that is mixed on the job (i.e. not premixed). Epoxies can have short or long working times, depending on the use.

EXPANSION JOINT COVER: Special covers designed to span expansion joints and shift with the movement of the separate parts of concrete without breaking.

EXPANSION JOINT: Concrete expansion joints, also referred to as "concrete isolation joints" or "construction joints", are a very important part of designing and building concrete slabs. Concrete has a weak tensile strength. Thus, when its natural tendency to shrink is restrained, tensile stresses exceed its tensile strength, which results in cracking.

Concrete expansion joints provide relief from the tensile stresses that cause uncontrolled cracking in concrete slabs by allowing the concrete to move freely as it shrinks or expands. Separations between adjoining parts of a concrete slab allow for separate movement. Such joints are usually filled with an elastomeric type of material. Expansion joints should never be filled with a cementitious underlayment product, as any movement of the separate parts may cause the cementitious underlayment to break up and be pushed out of the joint. Resilient flooring should not be installed over this type of joint, as cracking and/or buckling may occur. Expansion joint covers should be used, instead.

FOUNDATION: The structural portion of a building or wall below the first floor construction. The lowest supporting layers of a structure, including the footings.

FREEZE/THAW STABLE: Refers to an adhesive which is able to be frozen and thawed for a specified number of times without the emulsion breaking. An adhesive damaged by freezing and/or thawing results in poor handling characteristics - the adhesive becomes rubbery, stringy and thick, and is unable to be troweled or applied to the substrate. Always store adhesives according to the manufacturer's recommendations.

FULL SPREAD INSTALLATION: Spreading the adhesive over the entire substrate before placing the flooring.

GAUGE: The nominal thickness of a flooring material or of a layer within the material. With resilient flooring, wear layer and (backing) gauge are often listed separately.

GENERAL CONTRACTOR: A manager (and possibly a tradesman) employed by the client on the advice of the architect, engineer, architectural technologist, or the client (i.e. when the client acts as the manager). The general contractor is responsible for the overall coordination of a project.

Their duties and/or functions can include: 1a) Assessing project-specific documents (referred to as bid, proposal, or tender documents); 1b) Project-specific documents include: drawings, project manuals (including general, supplementary and/or special conditions and specifications), addendum or modifications issued prior to proposal/ bidding and prepared by a design professional (such as an architect), etc. 2) Visiting the jobsite to gain a better understanding of the project (especially when it comes to renovation projects); 3a) Submitting a fixed price proposal or bid (cost plus price or an estimate), depending upon the project delivery method; 3b) Considering the cost of home-office overhead, general conditions, materials and equipment, as well as the cost of labor, in order to provide the owner with a price for the project; 4) Sometimes serving as the construction manager or construction manager at risk; 5) Providing all of the material, labor, equipment (such as engineering vehicles and tools) and services necessary for the construction of the project ; 6) Hiring of specialized subcontractors to perform all or portions of the construction work; 7) Applying for building permits; 8) Securing the property; 9) Providing temporary, onsite utilities; 10) Managing onsite personnel; 11) Providing site surveying and engineering; 12) Disposing or recycling of construction waste; 13) Monitoring schedules and cash flows; 14) Maintaining accurate records.

GOUGE: Damaging cut, groove, or cavity in the flooring surface that is accompanied by material removal and penetration below the immediate flooring surface.

GRADE: The level of the subfloor in relation to the surrounding ground.

HUMIDITY: The amount of water vapor in the air. See "Relative Humidity."

JOINTS: The junction of precut surfaces butted together, such as tile or underlayment boards.

LAYOUT LINES (AKA REFERENCE LINES): Lines chalked on a substrate in a perpendicular manner, so as to provide a starting point and help guide an installer in accurately and squarely setting the tile flooring.

LEED (LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN®): A green building rating system that was developed by the U.S. Green Building Council in 2000 through a consensus based process. LEED is a tool for buildings of all types and size. LEED certification offers third party validation of a project's environmental features and verifies that the building is operating in the manner in which it was designed.

LIGHTWEIGHT CONCRETE: Concrete that substitutes a lighter material for the common stone aggregate found in standard concrete. The term refers to any cement weighing between 85 and 115 lb. per cubic foot. Builders use various lightweight aggregates in conjunction with standard sand and cement to form the concrete. Builders currently use lightweight concrete in some low- stress construction applications and in decorative pieces. Materials such as perlite, fly ash, expanded clay, slate, or pumice replace the common stone aggregate, thereby reducing the weight of the concrete. Pumice or scoria is a light volcanic stone containing voids or air pockets. These materials replace the heavier shale, granite or other stones used as aggregate material. Aggregate pieces are commonly 3/4" to 1-1/2" pieces. Resilient flooring manufacturers have minimum requirements for the application of their products over lightweight concrete, and should be contacted / consulted prior to installation.

MANUFACTURING DEFECTS: Defects or blemishes that occur during manufacturing, such as: out-of-specification variations in machining or cutting, uneven levels of or skips in finish coating, etc.

MASTIC: Relating to flooring adhesive - an extremely strong, liquid bonding agent that is generally applied with a specified notched trowel or roller to permanently bond flooring materials to the substrate. It is normally associated with water-based products, and is a catchall term.

MECHANIC: A term used for a floor installer.

MINERAL SPIRITS: A solvent product used as a thinner and/ or cleaner.

MOISTURE CONTENT (MC): (Wood) Moisture Content is the weight of water in a piece of wood expressed as a percentage of the oven-dry weight of wood. Most hardwood flooring is manufactured at 6% to 9% moisture content.

MOISTURE RESISTANCE: The ability to resist, to some extent, the damaging action of water.

MOISTURE VAPOR BARRIER: Typically, a polyethylene film that resists diffusion of moisture through the concrete subfloor. Technically, many of these materials are only vapor retarders, as they have varying degrees of permeability. Resilient flooring manufacturers require that concrete slabs be protected from ground moisture with an effective and intact vapor retarder that conforms to the requirements of ASTM E1745, "Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs."

NEUTRAL CLEANER: A mild detergent (pH of 6 to 8) that does not contain any strong, alkaline materials, and is designed to remove soil from and clean resilient flooring.

NOMINAL SIZE: In manufacturing, a nominal size or "trade size" is a size in name only, and is used for identification. The nominal size may not precisely match any dimension of the product (such as 2"x4" lumber), but might, within the domain of that product, correspond to a large number of highly standardized dimensions and tolerances.

ON GRADE: At ground level or in direct contact with the ground, over fill which is in direct contact with the ground, or with less than 18" of well-ventilated space between the bottom of the lowest horizontal structural member and any point of the ground. Commonly, a floor which is on ground level, with no basement or crawlspace beneath.

OPEN TIME: Amount of recommended time for an adhesive to set before it is covered with flooring. Open time is affected by temperature, humidity, and absorbency of the substrate.

OSB: Abbreviation of "Oriented Strand Board," OSB panels are constructed of strand-like wood particles arranged in layers (usually 3-5) oriented at right angles to each other. OSB is still available as STURD-I-FLOOR, though it is no longer used as an underlayment board.

PARTICLEBOARD: Boards manufactured from reconstituted wood particles, as opposed to wafers or strands. Commonly referred to as "flakeboard" or "chipboard", these panels are comprised of small particles usually arranged in layers by size.

PARTING AGENT (AKA RELEASE AGENT): Chemical compounds that combine with concrete and allow for the easy removal of hardened concrete from a casting mold. The first type of release agent is called a barrier release agent. It is usually an oil-based product that forms a physical layer between the mold and the liquid concrete. There are several kinds of barrier parting agents, including: petroleum oils, water emulsions, coatings with solvents, waxes, powders, and soaps. Parting agents must be removed from the concrete substrate prior to installation of resilient flooring

PH VALUE: The concentration of the hydrogen ion in a material. A pH value of 7 is considered neutral. Lower values are acidic; higher values are alkaline.

PLASTICIZER: Additive used in vinyl flooring that gives the material improved flexibility and durability. Plasticizers are added to the vinyl resin during the compounding step, and prevent vinyl materials from becoming brittle and subsequently cracking.

PLASTICIZER MIGRATION: The migration of plasticizer from the flooring to the adhesive. This causes unwanted softening of the adhesive, and may lead to release of the bond.

PLYWOOD: A fabricated wood board made of three or more separate plies or panels of wood veneer laid with grain of adjoining plies at right angles. Plywood is the most dimensionally stable of wood underlayment boards, and thus is recommended for all applications of resilient flooring. Standards for acceptable underlayments for resilient floors are set by the APA - The American Plywood Association.

POROSITY: Physical property of a material that is calculated by determining the amount of void space inside the material over the total volume of the material. Porosity can be expressed as either a fraction (between 0 and 1) or as a percentage (between 0% and 100%). The term is quite often misused in the flooring industry to describe a substrate's ability to absorb liquid; a more appropriate term would be "absorbency". The importance of determining the absorbency of a substrate to receive resilient flooring has to do with proper trowel selection, as the trowel acts as a metering device to apply the proper amount of adhesive. The absorbency (porosity) of a subfloor can be tested in a rather simple (albeit nonscientific) manner by placing a few drops of water on the surface of the subfloor. If the water is quickly absorbed, then the surface is considered to be absorbent (porous). If the water remains on the surface, then the surface is considered to be nonabsorbent (nonporous).

PORTLAND CEMENT: A finely pulverized material used in the making of concrete, it causes hydration to occur when mixed with water. Named for its color - like the Isle of Port off the English coast.

POT LIFE: The amount of time an adhesive remains useable in the container once it has been mixed or opened. Normally, used in reference to products which are mixed together, such as epoxy adhesives or Portland-based underlayments.

RADIANT-HEATED SUBFLOOR: A subfloor which also serves as a means to heat an area. Generally, heating coils, pipes, or ducts are built into the subfloor. Metroflor LVT by Metroflor resilient flooring can be installed over radiant-heated subfloors as long as the surface temperature does not exceed 85°F. Metroflor LVT flooring can soften when exposed to temperatures that exceed this limit, leading to an increased risk of indentation.

REINFORCED CONCRETE: Made by casting concrete around steel rods or bars.

RELATIVE HUMIDITY: Measure of the amount of moisture in the air relative to the total amount of moisture the air can hold. For instance, if the relative humidity is 50%, then the air is only half saturated with moisture. Warmer air can hold more moisture than colder air. Relative Humidity (RH) is usually considered on the basis of the weight of the vapor, but for accuracy should be considered on the basis of vapor pressures.

RESILIENT FLOOR: A non-textile floor surfacing material made in sheet or tile form or formed in place. Materials include but are not limited to asphalt, cork, linoleum, rubber, luxury vinyl, vinyl composition tile, and poured polymeric systems.

RETARDER: A slowly evaporating solvent that decreases the evaporation rate or slows up the drying of lacquers and similar materials.

ROLLING LOADS: Initial 48 Hours: Newly installed flooring should not be exposed to routine rolling traffic (carts, litters, gurneys, etc.) for at least 48 to 72 hours after installation to allow setting and drying of adhesives. Initial 48 to 72 Hours and Thereafter: The bearing surface area of wheels is deceptively small, resulting in higher compressive forces than may be anticipated. Therefore, when moving heavy fixtures or appliances over resilient flooring on casters or dollies, the flooring should be protected with 1/4 in. (6.35 mm) or thicker plywood, hardboard or other underlayment panels.

SACRIFY: A mechanical means (sanding or grinding) of roughing a surface to obtain a better bond.

SCRATCH: To make a thin shallow cut or mark on the flooring surface with a sharp instrument.

SCRUBBING: Washing a floor by wetting it with a detergent solution, then using a moderately abrasive non-woven pad or appropriate brush to agitate the wet surface. Scrubbing is performed either by hand or through the use of a low-speed floor machine, and is utilized when a floor is heavily soiled and less-aggressive cleaning methods have proven unsuccessful. A floor should always be thoroughly rinsed after it has been scrubbed.

SCUFF: A mar, scrape, wearing away of the surface or deposit onto the surface through abrasion or a thermo-mechanical displacement of the upper surface of the floor covering by friction from traffic bodies.

SCUFFING OF RESILIENT FLOORING: A marring, scraping, wearing away of the surface deposit onto the surface through abrasion or a thermo-mechanical displacement of the upper surface of the floor covering by friction from traffic bodies.

SEALER: Any finishing material that is applied with the primary purpose of stopping the absorption of succeeding coats.

SHELF LIFE: The period of time for which a manufacturer guarantees an unopened adhesive will be useable after it has been manufactured; the date of manufacture is normally stamped on the adhesive container. In most cases, the adhesive will be usable for a period of time following the shelf life. The handling characteristics of the adhesive deteriorate after this period, thus making it unusable.

SLEEPER-CONSTRUCTED SUBFLOOR: A wood subfloor installed over or on an existing concrete subfloor on or below grade without 18 inches of well-ventilated air space.

SOLID VINYL TILE: A resilient tile flooring composed of binder, fillers, and pigments compounded with suitable stabilizers and processing aids. The binder consists of polymers and/or copolymers of vinyl chloride, other modifying resins, and plasticizers that comprise at least 34% by weight of the finished tile. The polymers and copolymers of vinyl chloride comprise at least 60% of the weight of the binder. Any copolymer of vinyl chloride contains at least 85% vinyl chloride. Solid Vinyl Tile is manufactured to meet the requirements of ASTM F1700, “Standard Specification for Solid Vinyl Floor Tile.”

SPECIFICATIONS: The detailed selections of the architect that cover all of the material and labor methods to be used in erecting or renovating a building. Usually prescribes types of material, sources, and often lists method(s) of application or installation.

SPRAY-BUFFING: The application and buffing of a diluted floor polish or a specially formulated spray-buffing compound; this procedure is especially useful in high-traffic areas. The liquid is sprayed on the floor and then immediately buffed with a floor machine until dry. This helps reduce the need for stripping by protecting the base coat of polish. Spray buff only on clean floors with sufficient polish (three to five coats) in order to prevent the pad or brush from coming into contact with the flooring material.

SPREAD RATE: The approximate amount of coverage which can be expected from a given amount of adhesive when spread using the recommended trowel.

STRIPPING: Technical term used in the janitorial and sanitation industry to describe the multi-step process in which the finish of a hard surface floor is removed through the use of conventional stripping methods (such as slurry stripping). Removing the top finish from the floor is an important prerequisite for refinishing the floor, which makes it more even and safer for foot traffic. Old floor polish is usually removed through the use of a strong, alkaline detergent in conjunction with aggressive scrubbing procedures. Floors are stripped one small segment at a time, with each segment being thoroughly rinsed before the next segment is stripped. Stripping (and the necessary reapplication of polish) is a very aggressive floor maintenance procedure, and should only be performed when absolutely necessary.

SUBFLOOR/UNDERLAYMENT COMBINATION: A floor substrate which must meet structural requirements or building codes and have a smooth surface suitable for floor covering.

SUBFLOOR: The foundation for a floor in a building; the subfloor provides the strength of a floor. A floor laid as a base for underlayment, resilient floor covering, or other finished flooring.

SUBSTRATE: A smooth surface used beneath floor covering, such as: concrete, underlayment, or existing resilient flooring.

SUSPENDED: Also known as "above grade," a suspended floor has a minimum of 18" of well-ventilated air space beneath it.

TELEGRAPHING: When the irregularities, imperfections, or patterns of the substrate are visibly transmitted through the flooring.

TERRAZZO: A type of mosaic flooring made by embedding small pieces of marble, granite, glass or onyx in freshly placed mortar. The surface is usually hardened, grounded, and polished.

TROWEL: A hand tool with notches used for spreading adhesives onto a substrate. Trowels act as a metering device to ensure the correct amount of adhesive is applied to the substrate, thus providing a proper bond.

UNDERLAYMENT: A material placed under resilient flooring to provide a suitable installation surface.

VAPOR BARRIER: A material, such as foil, plastic film or specially coated paper, with a high resistance to vapor movement, used to control condensation or prevent migration of moisture. Any material used to stop the migration of vapor through walls, floors, or ceilings.

VINYL ASBESTOS TILE: An obsolete form of resilient tile composed of vinyl plastic binders, chrysotile asbestos fibers, mineral fillers, and pigments.

VINYL COMPOSITION TILE: Flooring composed of colored (PVC) chips, binders, fillers, and pigments compounded with suitable stabilizers and processing aides, which are formed into solid sheets of varying thicknesses (1/8" is most common) by heat and pressure. The binder consists of polymers and/or copolymers of vinyl chloride, other modifying resins, and plasticizers. VCT is manufactured to meet the requirements of ASTM F1066, "Standard Specification for Vinyl Composition Floor Tile." Vinyl composition tiles that do not meet the requirements of ASTM F1066 were widely used in all types of buildings into the early 1980s. It was during that period that the use of tiles, sheet flooring, and adhesives containing asbestos was discontinued, as asbestos was determined to be hazardous. Floor tiles are often cut into 9" or 12" squares. Tiles are typically waxed and buffed in commercial application through the use of special materials and equipment.

WALK-OFF MAT: A sheet of material placed at building entrances to remove grit, dirt, and contamination from the soles of shoes. Walk-off mats should also trap soil in order to prevent it from being picked up by subsequent traffic. As a general rule, mats should be as wide as the doorway and ideally 8′ to 12′ long.

WATER/CEMENT RATIO: Ratio (by weight) between water and cement. Only a small amount of water is needed for hydration, while the rest is used to make the concrete more workable. The water/cement ratio controls the characteristics of the paste and ultimately the concrete. Allowance must be made for water in the aggregate when adding water to the concrete batch.

WAX: A temporary protective coating similar to polish but softer in composition. Wax is generally buffed to achieve higher gloss levels.

WEAR LAYER: The portion of a resilient floor covering that contains or protects the pattern and design; exclusive of temporary finishes or maintenance coatings.

WEAR: Deterioration over time caused by use; a diminishing effect from the accumulation of abrasion, gouging, scratching, and scuffing of the thickness of the flooring.

WORKING TIME: The period of time during which one can install flooring, with the amount/period of time dependent upon the type of adhesive: 1) Pressure Sensitive Adhesives – installation occurs from the time the adhesive is dry to-the-touch until the time when the tiles will no longer bond with the adhesive; 2) Wet Set and Epoxy Adhesives - installation must occur as soon as the adhesive is applied to the subfloor (i.e. while the adhesive is wet, with full transfer to the backing of the tiles). Temperature, humidity and absorbency of the subfloor affect working time.

CARE & MAINTENANCE

GENERAL CARE & MAINTENANCE FOR METROFLOR PRODUCTS

Metroflor produces a wide range of luxury vinyl tile (LVT) floors that range from traditional glue down LVT to waterproof multilayer floating floors for residential and commercial applications. Regardless of the type of Metroflor floor, proper care and maintenance is key to achieving the maximum performance and value from your flooring purchase.

Metroflor's LVT is manufactured with a high-performance, protective coating. This highly durable floor covering does not require any floor finish or buffing in most applications. All floor coverings require some care to look their best, and many problems can be prevented before they occur. The area of usage, type of traffic, and frequency of traffic on the floor will determine the type and frequency of maintenance needed. Proper care and maintenance are an essential part of keeping your Metroflor flooring attractive and safe. These guidelines will help to maintain the appearance of and extend the life of your Metroflor flooring.

Floor-Care Best Practices

- Sweep or vacuum daily; use only vacuums without beater bars.
- Protect the floor from tracked-in dirt and grit particles by using walk-off mats at all outside entrances.
- Avoid the use of rubber-backed mats, as certain rubber compounds can permanently stain vinyl.
- In order to prevent indentations and scratches, provide glass, plastic, felt, or other non-staining cups with flat under-surfaces not less than 2" wide for the legs of heavy furniture or appliances. Equip swiveled-type office chairs and other rolling furniture with broad-surface, non-staining casters at least 2" in diameter. Remove small diameter buttons from the legs of straight chairs and replace with metal or felt glides that have bearing surfaces no less than 1" in diameter.
- Always use the proper equipment… such as the accessories sold at www.1877floorguy.com (independent website)… to protect the flooring from damage that could be caused by the moving of heavy fixtures or appliances.
- Use micro-fiber mops for wet cleaning and never use anything coarser than 3M-equivalent red cleaning pads or brushes on Metroflor's resilient flooring (see Maintenance Procedures section).
- Protect your floor against burns. Burns from the glowing end of cigarettes, matches, or other extremely hot items can damage Metroflor floors.
- Do not flood floor or subject to frequent standing water.
- Only use Prevail cleaning products, as they are designed for Luxury Vinyl Tile (LVT) floors with urethane coatings.
- All Metroflor floors have good resistance to stains and are not affected by most common spills. However, any spill should be cleaned up immediately. The longer the spilled materials are left on the floor, the greater the risk of permanently staining the floor. For information regarding the proper method or solution to use on a specific stain, contact Metroflor Customer Service toll-free at 888-235-6672.
- Avoid exposure to direct sunlight for prolonged periods. The use of drapes or blinds is recommended during peak sunlight hours. Prolonged exposure to direct sunlight can result in discoloration, and excessive temperatures might cause tiles or planks to expand.

MAINTENANCE PROCEDURES

Safety: When performing wet maintenance, always use caution. Provide proper signage and prohibit traffic until the floor is completely dry. When using electrical equipment, follow electrical equipment manufacturer's safety instructions.

NO-POLISHING/NO-BUFFING MAINTENANCE OPTIONS

Initial Maintenance for a Newly Installed floor

1. For glue down installations, allow the adhesive to cure for at least 48 hours prior to wet-cleaning the floor. Floating floor installations can be walked on immediately after installation.
2. For all floor types, thoroughly sweep, dust-mop, or vacuum (without beater bar assembly) the floor to remove all loose dirt, dust, grit, and debris.
3. For glue down installations, remove any dried adhesive-residue from the surface with Prevail 1-Step Neutral Cleaner, or with mineral spirits applied to a clean, lint-free cloth. Do not allow excessive amounts of solvent to sit on the vinyl or to penetrate the joints of the flooring. NEVER APPLY SOLVENT DIRECTLY TO FLOORING.
4. For all floor types, damp-mop the floor using a micro fiber mop andPrevail 1-Step Neutral Cleaner.
5. Thoroughly rinse the entire floor with fresh, clean water. Remove the dirty residue with a wet-vacuum or with a clean mop and allow the floor to dry completely.

Daily/Routine Maintenance

1. Clean entryway walk-off mats to remove dirt, grit, sand and other contaminants from being tracked onto the floor (as needed).
2. Thoroughly sweep, dust-mop, or vacuum (without beater bar assembly) the floor to remove all loose dirt, dust, grit, and debris that can stick to and damage the surface of the floor.
3. Spills should be cleaned up immediately. Spot-clean using Prevail 1-Step Neutral Cleaner and micro fiber or preferred mop.
4. Damp-mop the floor on a regular (recommended - daily) basis using Prevail 1-Step Neutral Cleaner.

Periodic Maintenance

1. For heavily soiled floors it may be necessary to scrub the floor using an auto scrubber or rotary machine (175 rpm or less) with Prevail 1-Step Neutral Cleaner, using the proper dilution ratio. Fit the buffer with a 3M-equivalent red or white scrubbing pad and work the solution over the floor.
2. Thoroughly rinse the entire floor with fresh, clean water. Remove the dirty residue with a wet-vacuum or with a clean mop and allow the floor to dry completely.

ALTERNATIVE MAINTENANCE OPTIONS FOR COMMERCIAL AND HEAVY USAGE AREAS ON GLUE DOWN PLANK & TILE ONLY

Alternative maintenance options provide end-users with the flexibility of using different methods to maintain their floors, based upon the needs of the area of usage. Metroflor LVT traditional glue down floors may be maintained using the Prevail Finish Option or the Spray Buff Option, as detailed.

Prevail Finish Option

1. After completing Steps 1 and 2 under the "Initial Maintenance for a Newly-Installed Floor" section, scrub the floor using an auto scrubber or rotary machine (175 rpm or less) with Prevail 1-Step Neutral Cleaner, using the proper dilution ratio. Fit the buffer with a 3M-equivalent red or white scrubbing pad and work the solution over the floor to remove contamination and promote adhesion.
2. Thoroughly rinse the entire floor with fresh, clean water. Remove the dirty residue with a wet-vacuum or with a clean mop and allow the floor to dry completely.
3. Apply two or more coats of Prevail Matte or Gloss Finish.
4. Apply additional coats of floor finish (only as needed). Refer to Prevail Floor Finish label.

Spray Buff Option

1. After completing Steps 1 and 2 under the "Initial Maintenance for a Newly-Installed Floor" section, machine-scrub the floor with Prevail 1-Step Neutral Cleaner, using the proper dilution ratio. Fit the buffer with a 3M-equivalent red or white scrubbing pad and work the solution over the floor to remove contamination and promote adhesion.
2. Thoroughly rinse the entire floor with fresh, clean water. Remove the dirty residue with a wet-vacuum or with a clean mop and allow the floor to dry completely.
3. Using a handheld spray-bottle with Prevail Matte or Gloss Finish, and working in small areas (10 x10 foot), lightly mist the floor and buff using an auto scrubber or rotary machine (175 rpm or less) fitted with a 3M-equivalent red pad.
4. Routine (recommended - daily) and periodic maintenance should be performed, as stated in above sections.
5. Machine-scrubbing should always be conducted prior to spray buffing.

Restorative Maintenance

1. Mix Prevail Vinyl Stripper solution per instruction-label. Blockade and set up caution signs. Using a clean, string mop, apply liberal amounts of solution onto the floor and allow to soak per the instructions. Rewet if necessary.
2. Using a low speed machine (175 rpm or less), scrub the floor with a scrubbing brush or pad equivalent to a 3M red pad.
3. Use a wet-vacuum or a clean mop to remove the dirty stripping solution. If the floor begins to dry, it may be necessary to drizzle fresh, clean water onto the stripper solution to remove it.
4. Thoroughly rinse the entire floor with fresh, clean water. Remove the dirty residue with a wet-vacuum or with a clean mop and allow the floor to dry completely.
5. Next, start over by following the Prevail Finish Option.

Automatic Scrubbers

Automatic scrubbers come in walk-behind and ride-on styles with some being compact for hard-to-reach areas around equipment or fixed seating. Auto Scrubbers are efficient, safe and cost effective delivering substantial time savings compared to the mop and bucket method of floor maintenance.

HEALTHCARE MAINTENANCE

DAILY MAINTENANCE BETWEEN SURGICAL PROCEDURES

1. Follow the specific Infection Control and Standard Operating Procedures for facility.
2. Pick up and discard all loose waste and debris into trash receptacle.
3. Disinfect the floor using a microfiber mop with a properly diluted EPA registered disinfectant cleaner. Maintain the wet surface for the required dwell time in accordance with cleaner instructions.
4. Allow the floor to air dry before resuming use of the room.

CAUTION: Strictly follow maintenance procedures to contain and confine pathogens in order to prevent contamination across the operating room or cross contamination from room to room. Follow all Infection Control and Standard Operating Procedures for your facility.

NOTE: It is important to perform end of day cleaning as floor disinfectants do not provide the same level of cleaning efficacy and emulsification of soiling. Over time, disinfectant cleaner residue will build up and can cause slippery or sticky surfaces or discoloration to the flooring that can be very difficult to remove.

For further information, inquiries and troubleshooting please contact: Metroflor Customer Service Monday-Friday, 8:00 a.m. to 5:00 p.m. EST at (888) 235-6672.

NOTES: STAIN REMOVAL

To remove stubborn spots and stains from Metroflor's floors, always begin with mild cleaners, such as Prevail 1-Step Neutral Cleaner. If such cleaners fail to remove the spots and stains, and "if permitted," use mineral spirits. Do not use harsh solvents, such as lacquer thinner or straight acetone, as these can permanently soften and damage the vinyl surface.

For stubborn spots and stains (such as paints, permanent markers, and dyes), and "if permitted," try applying fingernail polish remover containing acetone (do not use straight acetone) to a soft cloth and rubbing across the affected areas. Subsequent to this cleaning procedure for stubborn spots and stains, please clean the affected area with clear water to remove any residue. Any damage resulting from the use of pure solvents IS NOT covered by Metroflor's warranties. Always test stronger cleaning agents on sample pieces or in unnoticeable areas first.

Never use a brush or pad more aggressive than a 3M red equivalent. Blue, Green, Brown and Black pads will damage the surface of the floor.