MATWORKS
PROTECT EVERY STEP

Luxury Vinyl Flooring
INSTALLATION GUIDE

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CONTENTS

ABOUT US 3

INTRODUCTION 4

- Precautions 4
- Reference Documents 5
- Receiving, Storage & Handling 6
- Jobsite Requirements 6
- Suggested Tool List 12
- Adhesives 13
- Acclimation Requirements 14
- Layout 15

INSTALLATION 15

- Recommended Layouts 15
- Pre-Installation 18
- During Installation 18
- Post-Installation 20

ABOUT US

For more than 60 years, MatWorks, a division of Mountville, has provided solution-based floor-covering and matting products designed to help retail, grocery, and hospitality partners minimize risk, reduce maintenance costs, and enhance the aesthetics of their spaces. Products include entryway carpet tile and grid systems, walk-off and anti-fatigue matting, and interior flooring such as LVT, and ceramics. With a 100% satisfaction guarantee, MatWorks also provides customers an eco-friendly entryway flooring solution with full-life cycle support, making the adoption of sustainable flooring a seamless process.

Our core values are the driving force behind every decision we make:

Do the right thing.
Do what is best for the customer.
Drive improvements and innovation.

It is these core values that drive us to provide our customers with high-performance, high-quality entryway systems and matting solutions with unparalleled customer satisfaction. MatWorks is proud to be part of the Mountville family of companies.

SATISFACTION GUARANTEED

MatWorks is where design and function come together, where quality isn't compromised to meet a price point, and where solutions to your safety and maintenance problems come first. We promise our customers an unconditional, 100% satisfaction guarantee for the life of the product.

A PARTNER YOU CAN RELY ON

Whether it's reducing your operating expenses, increasing your business's competitive edge, or increasing your employees' satisfaction and productivity, we are focused on helping you achieve your goals and mission by identifying and installing the very best flooring solutions.

COMPANY INFORMATION

For more product information and cleaning instructions, visit www.thematworks.com.

Find us on social media:

linkedin.com/company/the-matworks

INTRODUCTION

The key to a successful and trouble-free installation begins with proper jobsite preparation. This starts with a thorough on-site evaluation (including jobsite testing), ensuring that subfloor preparations are completed and all deficiencies are corrected.

MatWorks Commercial Dryback LVT/LVP products range from 2.5 mm to 5 mm thick and have a square edge. They can be installed without transition to adjoining products of the same or greater thickness.

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

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

MatWorks flooring should be installed by professional flooring contractors who have demonstrated successful experience with projects of similar size, scope, and complexity.

MatWorks does not warrant the installer's workmanship. Please review the limited product warranty available at www.thematworks.com.

PRECAUTIONS

All resilient flooring products require care under the following conditions:

Footwear

Avoid exposure to stiletto heels, cleats, spiked footwear, and other types of footwear that may cause damage.

Staining Agents

Promptly clean up spills and prevent the floor from exposure to conditions known to cause staining. Common examples include flooring near newly applied asphalt on driveways or parking lots, as well as components in certain rubber products, such as rubber mats, rubber-backed mats, rubber wheels, and tires.

Excessive Heat

Protect from heat exposure that can discolor, melt, or burn the flooring.

Forklifts & Pallet Jacks

Protect the floor from areas where forklifts and pallet jacks are frequently used or utilized in a manner that can result in surface damage. Also, protect the floor from jagged or sharp edges, splinters, or nails protruding from pallets or objects transported by a pallet jack, hand truck, or other conveyance that may cause damage or injury.

Solvents & Chemicals

Promptly clean up all spills. Avoid excess exposure to alcohols, ketones, or other solvents, which may damage the flooring or cause injury.

Floor Protection

Proper floor protection devices shield the flooring from furniture, chairs, and equipment. Equipment, furniture, and chairs must be equipped with proper glides and casters appropriate for hard surface flooring to prevent indentation, scratching, gouging, delamination, or other damage.

Use commercial-grade felt or carpet floor glides and soft urethane or composite wheels or casters (Shore A hardness of 70-90). Do not use plastic, rubber, or metal furniture glides, wheels, or casters, as they can damage the floor. Hard-surface chair pads are recommended under frequently used chairs.

Topical Moisture & Floor Drains

Protect flooring from excessive or prolonged exposure to topical water and dampness during use or maintenance. Use epoxy, urethane, or modified silane adhesives that are waterproof when cured in areas exposed to frequent and prolonged topical moisture, like exterior doorways, bathrooms, floor drains, and around cold cases, refrigerator units, or freezers that create condensate.

Walk-Off Mats

The facility is responsible for using and maintaining proper walk-off mats at all entrances and interior areas with potential moisture or soiling exposure (kitchens, bathrooms, wash areas, refrigerator cases, produce areas, maintenance, mechanical, or production areas). When properly maintained, walk-off mats capture and hold soil and moisture, preventing it from being tracked throughout the building.

Markers, Paint & Tape

Protect flooring and subfloor from markers, pens, construction crayons, paint, or tape. These items may bleed through and stain the flooring or cause damage. Use pencils for marking the subfloor when possible. Sand off or remove any markers, tape, or paint as part of surface preparation before installation. Refer to the manufacturer's instructions for proper use and removal of the marker, tape, and paint product.

Cleaning Chemicals, Equipment & Use

Always properly dilute cleaners and use appropriate maintenance chemicals and equipment as recommended by the manufacturer, following the manufacturer's current instructions.

- **DO NOT** mix bleach with ammonia or acids like vinegar or rust removers.
- **DO NOT** use cleaners containing pine oil.
- **DO NOT** use phenolic or enzyme-based cleaners unless neutralized and rinsed with clean water immediately after each use.

REFERENCE DOCUMENTS

Installation site conditions must comply with the information provided within this document and with the applicable requirements in the current versions of:

- ASTM F710 "How to Prepare Concrete Substrates to Receive Resilient Flooring"
- ASTM F1482 "Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring"
- ASTM E1745 "Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs"
- ASTM F1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride"
- ASTM F2170 "Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes"
- ASTM F2659 "Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and Other Floor Slabs and Screeds Using a Non-Destructive Electronic Moisture Meter
- ASTM F3010 "Standard Practice for Two-Component Resin Based Membrane- Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings"

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

RECEIVING, STORAGE & HANDLING

Immediately upon receipt, carefully inspect all materials to confirm the following:

- There is no freight damage.
- Confirm that you have received the correct:
  - COLOR
  - QUANTITY
  - SIZE
  - DYE LOT(S)

  As stated on your order confirmation.

WARNING: The material purchaser and receiver are responsible for reporting freight damage on the bill of lading to the freight carrier during delivery. **You are responsible for the materials once received.**

Store flooring products in a watertight enclosed area between 50°F (10°C) and 90°F (32°C). Store flooring away from exterior doors and windows, and maintain the room temperature as close as possible to the anticipated operational temperature. Do not use outside or portable temporary storage containers.

Store flooring cartons flat and neatly stacked, with each one squarely on top of the next. The flooring can be floor-stacked, but storing it on flat-based pallets or racks is preferable. All storage areas, pallets, and shelves shall have a flat, smooth, fully supported surface without spaces between slats or gaps, and shall not be directly on wire shelving. If not, the cartons should be neatly stacked on a 1/4” or thicker smooth- face plywood base directly on the pallet or shelf.

JOBSITE REQUIREMENTS

HVAC

The permanent HVAC system or temporary HVAC system must be functional, in continuous operation 24/7, maintaining a consistent temperature between 65°F (20°C) and 85°F (29°C) in the air and on the subfloor surface for a minimum of seven (7) days before and during moisture testing and for a minimum of seven (7) day before, during, and continuously after installation. In addition, the HVAC system must maintain the air Relative Humidity (RH) at the anticipated occupancy level for seven (7) days before and during moisture testing and between 35% RH and 55% RH seven (7) days before, during, and continuously after installation.

Temporary HVAC

When a temporary HVAC system is used, the General Contractor or HVAC contractor shall use data loggers to take readings each hour or more frequently, detailing the air temperature and RH. Additionally, the subfloor surface temperature must be checked at least daily for at least seven (7) days before and during moisture testing, as well as for at least seven (7) days before, during, and continuously after installation, until the permanent HVAC system is operational. Take subfloor temperature readings within two feet of all exterior walls every 30 feet and record them with measurement locations marked on a floor plan. Only proceed with the installation if all conditions are within specification.

Floor Flatness
Use a 10 ft. & 1 ft. straight edge to check the surface flatness. The surface shall be flat to 3/16 inch in 10 ft. (3.9 mm in 3 m) and 1/32 inch in 12 inches (0.8 mm in 305 mm). When a 10 ft. straight edge is not available, use a 6 ft. straight edge. When using a 6 ft. and 1 ft. straight edge, the surface shall be flat to 1/8 inch in 6 ft. (3.2 mm in 1.8 m) and 1/32 inch in 12 inches (0.8 mm in 305 mm). Level high spots by sanding, grinding, or other methods, and fill and smooth low spots with an appropriate surface preparation material. Rework to prevent irregularities or roughness from telegraphing through the new flooring.

F-Number System
Values of FF 36/FL 20 are generally acceptable for concrete floor slabs intended for use with resilient floor coverings, depending on the intended use.

Wood Subfloor
Use a double-layer construction with a minimum thickness of one (1) inch (to include a ¼ in. or thicker underlayment grade panel rated for resilient flooring), suitable for the design load and joist spacing. Wood subfloors on-grade shall have at least 18" well-ventilated air space beneath. DO NOT install wood subfloor panels on sleeper-type subfloors or apply them directly onto concrete. Do not bond directly to fire-retardant or preservative-treated plywood, particleboard, chipboard, flakeboard, oriented strand board (OSB), hardboard, or similar. These subfloors require adding a suitable ¼" or thicker underlayment grade panel over the existing subfloor.

Wood subfloors shall be flat, smooth, dry, and structurally sound. They shall be clean and free of all foreign material, such as dust, wax, solvents, paint, grease, oils, old adhesive residue, adhesive removers, mold, mildew, and other foreign material that might prevent good adhesion or cause a discoloration of the flooring from below.

Underlayment Panels
Use APA or other manufacturer-approved underlayment panels recommended for resilient flooring.

Wood Flooring
Due to potential expansion and contraction, cupping, and buckling of individual boards during seasonal changes, install a 1/4 " or thicker resilient flooring underlayment-grade panel over existing wood flooring.

Wood Moisture Testing
When checked with a calibrated pin moisture meter, readings between the wood framing, subfloor panels, and underlayment panels should be within 2% to 3% of each other and have a moisture content of less than 14%.

Concrete Floor Slabs
The surface of concrete floors to receive resilient flooring shall be dry, clean, smooth, and structurally sound. They shall be clean and free of dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive removers, film-forming curing compounds, silicate penetrating curing compounds, sealing, hardening, or parting compounds, alkaline salts, excessive carbonation or laitance, mold, mildew, and other foreign materials that might affect the rate of moisture dissipation from the concrete, the adhesion of resilient flooring to the concrete or cause a discoloration of the flooring from below (ASTM F710).

Lightweight Concrete
Lightweight aggregate concretes with dry densities greater than 90 pounds per cubic foot are generally acceptable for use under resilient flooring. Concrete slabs subjected to heavy static and/or dynamic loads should be designed with higher strengths and densities to support these loads.

Concrete Curing
Wet curing for seven (7) days is the preferred method for curing new concrete. Curing compounds can have unintended negative consequences for the flooring installation process. Always remove curing compounds and perform multiple bond test locations when used.

Concrete Curing Compounds

Concrete curing compounds are not recommended. Curing compounds can interfere with the bond of the floor patching materials and adhesive to the concrete. Seek assistance from the adhesive or surface preparation manufacturer to determine if curing agents are present and how to mitigate them. When film-forming curing compounds are used, completely remove the curing compounds by sanding the surface 28 days after placement, allowing the concrete floor slab to dry. **Always perform multiple bond test locations when a curing compound has been used.**

Moisture Vapor Retarder

Confirm that all concrete floor slabs on or below grade that will receive resilient flooring have a permanent, effective moisture vapor retarder with a minimum 10 mil thickness and permeance of 0.1 y (ASTM E1745) properly installed directly below the slab. When these conditions do not exist or cannot be verified, apply a moisture mitigation system before installing the resilient flooring. It is the general contractor's and facility owner's responsibility to confirm whether or not there is a proper moisture vapor retarder installed directly under the slab.

CAUTION: While it may not be the flooring contractor's responsibility to conduct testing to verify an appropriate and intact vapor retarder or perform jobsite testing, the flooring contractor is responsible for ensuring these tests and determinations are completed, documented, and acceptable before installation.

Concrete Surface Preparation

Use cementitious or calcium aluminate patching and leveling compounds, following the manufacturer's instructions, with a compressive strength of 3,000 psi or greater, based on project requirements. Use products that are resistant to mold and mildew. For cracks or saw cuts wider than 1/16 inch and/or deeper than 1/2 inch, use a 2-part epoxy or urethane crack-filling material that will prevent moisture from flowing through the crack and provide a smooth surface. After patching, sand the surface to remove all ridges and rework any remaining low spots or surface defects to provide a smooth, stable bonding surface. Vacuum the entire surface, paying close attention to the perimeter to remove all dust and debris.

Prime Porous/Dusty Slabs

Porous and/or dusty, structurally sound concrete substrates shall be primed before installation. Apply a properly prepared and appropriate primer following the manufacturer's instructions.

Concrete Moisture Testing

All resilient flooring installed with a moisture-sensitive adhesive over concrete must have proper moisture testing performed to determine the suitability of the current slab conditions. Before installing smoothing or leveling compounds, perform moisture testing and record the results. This includes results from ASTM F2659 for a preliminary evaluation of moisture conditions using an electronic moisture meter or a mat test to survey the jobsite.

Concrete moisture testing shall include ASTM F2170 RH (Relative Humidity) testing and/or ASTM F1869 MVER (Moisture Vapor Emission Rate) testing. To be valid, complete the moisture testing following the current guidelines at the time of testing. The concrete moisture readings must show acceptable results for the selected adhesive before installation.

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

Concrete Moisture Mitigation

Two options exist to address this condition when moisture readings exceed the adhesive system's RH and/or MVER limits. ONEFLOR USA does not warrant any product or procedure for the remediation of high moisture content.

- A dehumidification system can accelerate the dissipation of moisture from the slab. This process will require monitoring and retesting to achieve compliant results.
- Apply a moisture mitigation system. This option is faster but more expensive. For guidance, refer to ASTM F3010, Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings or other appropriate moisture mitigation systems.

Concrete Moving Joints

Moving joints (expansion, isolation, and other moving joints) are built into concrete floor slabs to allow for movement without developing random cracks. All moving joints must be honored with a break in the flooring and not patched and installed over. The architect or engineer should detail expansion joint covering systems based on intended usage and aesthetic considerations.

Chemical Abatement

It is not recommended that solvent adhesive removers (inorganic or bio- based) be used or that an existing floor covering or adhesive be chemically abated. Adhesive removers can remain in the slab, under walls, and within cracks, causing failure of the new floor covering, surface preparation materials, and/or adhesive after installation. To remove all flooring and adhesives, follow the resilient flooring removal procedure detailed in the RFCI's Recommended Workplace Practices for Removal of Resilient Floor Coverings without the use of solvents.

Chemical Abatement Surface Preparation

When a concrete slab has been abated, we recommend the following procedure before installation to ensure a lasting, successful installation.

- The substrate must be cleaned and neutralized. The chemical abatement company usually completes and confirms this.
- If neutralization is not confirmed, then:
    1. Wet scrub the substrate with a neutral pH cleaner and a green or red maintenance pad.
    2. Remove the wet/slurry mix with a wet vacuum. DO NOT let the solution dry on the surface before removal.
    3. Mop the floor with clean water. Frequently change the water.
    4. Use pH test strips at multiple locations to verify that the concrete substrate is neutralized (pH between 7.0 and 10.0). Test at least three locations and every 3,000 sf throughout the project.
    5. Leave the substrate open for 48 hours to thoroughly dry, ensuring adequate air exchanges and movement in the space.
    6. Shot blast, scarify, or mechanically prepare the concrete substrate to achieve a clean and porous/absorbent state (per ASTM F 3191). The installation contractor shall determine the necessary equipment and processes to achieve a compliant slab surface.
        a. Ensure there are no signs of residue on the slab surface. The substrate should be a uniform single color (typically light grey).
        b. Thoroughly clean and vacuum the substrate.
        c. Test and document that the surface is porous following the current ASTM F 3191 test method for surface absorbency. The substrate must be porous (absorbent) before proceeding.
    7. Apply Wakol PU-280 following the current Technical Data Sheet to seal the clean, porous slab surface.
    8. Finish preparing the substrate for flooring installation.

Existing Flooring

An existing flooring must be on-grade or above-grade (not below grade). Existing resilient flooring may include single-layered, non-cushion-backed, fully adhered VCT, Sheet Vinyl, or LVT, with no indication of moisture or alkalinity issues. Existing quarry tile, terrazzo, ceramic tile, or poured floors (epoxy, polymeric, seamless) must be fully cured and well bonded to a concrete slab, free of solvents, wax or polish, oil or petroleum derivatives, grease, grime, or any other surface contaminant with no indication of moisture or alkalinity issues.

Remove all wax or polish and clean the surface. Repair or patch any damaged, loose, or missing areas or other irregularities in the existing floor covering. Fill low spots, holes, chips, seams, or grout joints that may telegraph through the new flooring. Sand highly polished, smooth, or non-porous surfaces and rough, textured, or irregular surfaces. Use an embossing leveler to smooth any embossing or surface texture and to aid in proper bonding. **DO NOT** install over rubber flooring.

CAUTION: The installation and general contractors are solely responsible for determining the suitability of the existing flooring to install over. If there is any doubt about suitability, the existing floor should be removed or covered with an appropriate underlayment. Installations over existing resilient flooring are more susceptible to indentation.

Adhesive Residue

Remove or encapsulate adhesive residue as specified by the manufacturer of the subfloor surface preparation or the adhesive manufacturer, using industry- accepted methods (such as mechanical removal or wet scraping).

Radiant Heat

Concrete and plywood subfloor systems can utilize radiant heat. The heating system components must have a minimum of 1/2" separation from the flooring product. The maximum surface temperature should never exceed 85°F (29°C) under any condition of use. An in-floor temperature sensor is recommended to avoid overheating. The radiant heating system must be operational and turned on at the high heat setting for at least two (2) weeks prior to installation to reduce residual moisture. Three days before installation, lower the temperature to 65°F.

After installation, gradually increase the temperature in increments of 2-3°F (1- 2°C) every one to two days over 2-3 weeks, returning the system to its normal operating temperature. This gradual increase in temperature will allow the adhesive system to properly cure and minimize thermal expansion and contraction. Contact the manufacturer of your radiant heating system for specific recommendations when used with resilient flooring.

Undercut Door Jambs

Using an oscillating or undercut saw and a scrap piece of flooring, place the flooring next to the doorframe to undercut the thickness of the flooring to be installed. Proceed to undercut all door casings and other trim as appropriate.

Mat Bond Test

A mat bond test is necessary to determine the flooring system's compatibility with the prepared substrate conditions. The installation contractor is responsible for determining the suitability of the prepared substrate and determining the number of mat bond tests to be performed. Adhesive selection should be based on the space involved, use conditions, and other relevant factors, including exposure to dampness, slopes, floor drains, and other relevant factors.

This test confirms that the prepared bonding surface is free from any surface treatment (sealer and curing agents, parting compounds, etc.) or condition (old adhesive, dust inhibitors, oil, grease, paint, varnish, etc.) that is detrimental to the adhesive bond.

- Follow these instructions to perform the bond test using the specified flooring and adhesive on the prepared surface.
- Install test areas that are 2 ft. x 2 ft. or larger.
- Tape the flooring edges to prevent rapid drying during testing.
- The contractor shall perform at least one (1) bond test. MatWorks recommends a bond test on each concrete pour (every 3,000-4,000 SF).
- Roll each test area according to the manufacturer's instructions.
- Allow areas to cure for 72 hours or more before testing bond strength.
- After 72 hours, pry up a corner and lift the flooring by hand.
- If the flooring is easily removed, the bond test fails. Remedial action must be taken to resolve the poor bond strength condition.
- The bond test passes if the flooring is difficult to remove or tears when pulled up.

Surface Protection

Cover the subfloor surface to prevent contamination during spackling, painting, pipe cutting, and other functions. Spackling, permanent marker, paint, paint thinner, machine oil, tape, or other items that may contaminate the floor can cause discoloration or bond failure.

Install Flooring Last

Allow other finishing trades, especially overhead and wall work, to complete their tasks before beginning the floor installation.

Lighting

Provide good overhead lighting to help achieve proper subfloor preparation and installation. The ideal lighting will be equivalent to the facility lighting during use. Poor lighting is no excuse for improper workmanship.

Documentation

Record and photograph the site conditions, test results, corrective measures, and installation process, including floor protection. All relevant pre-installation and installation documentation, photos, product invoices, shop drawings, and project information should be stored and maintained for the duration of all product warranties.

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

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

SUGGESTED TOOL LIST

Personal Protective Equipment (PPE)

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

Substrate Preparation Tools

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

Measuring/Marking Tools

- Tape Measure
- Pencil
- Chalk Line & Colored Chalk
- Non-Contact Infrared Thermometer
- Air Temp. & Humidity Gauge
- 10 ft. Straight Edge
- 6 ft Straight Edge
- 1 ft. Straight Edge
- Automotive feeler gauge or a 6-inch steel ruler with 1/32 inch graduations (to measure low points with the straight edge on the surface).

Maximum gap:

- 1/32" (3/4 thickness of 1 Dime with 1 ft. straightedge)
- 1/8" (1 Quarter & 1 Dime with 6 ft. straightedge)
- 3/16" (2 Quarters & 1 Dime with 10 ft. straightedge)

- Speed Square (Carpenters Square or Framing Square)

Installation Tools

- Utility Knife with extra Blades
- Tile Cutter (optional)
- Adhesive Trowels
- Spare Trowel Blades
- 100 lb. Three-Section Roller Hand Roller
- Knee Pads

Cleaning Tools

- Clean cloths or shop towels
- 70% Isopropyl Alcohol
- Dustpan and brush
- Broom or shop vacuum
- Trash bags

ADHESIVES

MatWorks recommends using a premium LVT flooring adhesive that meets the project specifications. Critical points for adhesive selection include anticipated use conditions, time available for project completion, whether there are slopes or ramps, floor drains, topical moisture exposure, subfloor moisture, and pH conditions. Critical points for adhesive use include proper trowel notch and open time for conditions (Porous or Non-Porous & Ambient/Slab Temp and RH), immediately rolling the floor with a 100 lb., 3-section roller, and rolling the perimeter, under toe kicks and around columns or abutments with a hand roller to ensure complete contact between the adhesive to the subfloor and the back of the flooring. As a general rule, you want to achieve 100% adhesive coverage on the back of the flooring and a minimum of 80% adhesive coverage at all times.

LVT products have been successfully installed with premium LVT flooring adhesives from Ardex Americas (WW Henry), Bostik (XL Brands), HB Fuller (Parabond & TEC), HPS North America (Schonox), Mapei, Meridian Adhesives Group (Taylor), Roberts (QEP), Sika (Dritac), Spraylock, Stauf, Uzin, Wakol, and other premium adhesive suppliers. As project requirements vary and adhesive offerings change, please refer to your local flooring supplier or distributor to determine the best adhesive for your project.

Always follow the adhesive manufacturer's current technical data sheet and label instructions for their adhesive.

Determine Substrate Surface Water Absorption (Porosity)

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

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

CAUTION: Check non-porous substrates to ensure there is no surface contamination, curing compound, or concrete additive that would alter the surface porosity and/or adhesive bonding ability. Consult the adhesive and surface preparation material manufacturers to determine the corrective actions to be taken.

Porous Surfaces

For most dispersion (water-based) adhesives, place the resilient flooring into the adhesive after about 10-20 minutes of open time as the adhesive valleys turn clear. After installation, immediately roll the flooring with a 100-lb. three- section roller, checking to ensure complete contact with the adhesive. DO NOT exceed the working time of the adhesive (refer to the adhesive label).

Non-Porous Surfaces

For most dispersion (water-based) adhesives, it is recommended to back-roll the freshly troweled adhesive. This step helps prevent adhesive trowel ridges from telegraphing through the installed flooring. Install flooring when the adhesive is 80% or more clear (dry-to-touch and tacky with no or slight transfer when lightly touched). It usually takes 30 to 45 minutes of open time at the recommended installation temperature and humidity. DO NOT exceed the working time of the adhesive (refer to adhesive label). Always follow the adhesive technical data sheet or adhesive label.

Adhesive Transfer

During installation, frequently check the back of the flooring to ensure a minimum of 80% adhesive coverage.

Roll Flooring
Slowly roll the flooring with a 100 lb. 3-section roller immediately after installation, within the adhesive open time, overlapping each pass by 50%. Roll up and down, then side to side. Use a hand roller around the perimeter, under toe kicks, around columns or abutments, and in areas the 3-section roller cannot reach. Ensure complete adhesive contact between the subfloor and the back of the flooring. Some adhesives require rolling the floor multiple times to achieve a successful bond.

Adhesive Clean-Up
Clean up wet adhesive using a clean cloth with soap and water. Dried adhesive may require 70% isopropyl alcohol or mineral spirits for removal. Follow the adhesive label instructions and always test the cleaner in an inconspicuous area before use on the floor. Apply the cleaner to a clean cloth and wipe from the outer edge of the spot inwards to the middle. For hardened adhesive, let the cloth with cleaner sit on the adhesive for 1-2 minutes, then begin to remove it from the outer edges inward. Repeat the application and cleaning process until the surface is clean or no further improvement occurs. After cleaning, rinse the area with clean water and dry the surface.

ACCLIMATION REQUIREMENTS

Weathertight
The installation area must be fully enclosed, with a finished roof, walls, doors, and windows installed.

Operational HVAC
The HVAC (Permanent or Temporary) system must be in continuous operation and maintain a constant temperature for a minimum of 7 days before starting the installation and remain in operation continuously thereafter. The HVAC system must be in continuous operation, set to 72°F (22°C), and maintained between 35% RH and 55% RH for a minimum of 7 days before and during moisture testing (ASTM F1869 or ASTM F2170).

Moisture Testing Temperature & RH
During moisture testing, the room and substrate surface temperature should be at the expected in-use service temperature or 72°F (22°C), maintained ±5°F (±3°C), and the RH should be at the expected in-use relative humidity or between 35% RH and 55% RH.

Acclimation
Acclimation is achieved when the flooring, adhesive, accessories, and subfloor surface are all within 3°F (2°C) of one another and within ±5°F (±3°C) of the expected in-use temperature. To optimize acclimation, do not stack cartons more than five high and space them six inches apart.

Temperature & RH
Maintain the temperature at the anticipated in-use service temperature ±5°F (±3°C) or a constant temperature ±5°F (±3°C) between 65°F-85°F (18°C-29 °C) and maintain the room's relative humidity (RH) between 35%-55% RH for a minimum of seven (7) days before, during, and continuously after installation.

Protect from Direct Heat/Cold Exposure
Ideally, store flooring and other materials in the "center" of the installation area (away from exterior walls or outside doors, air vents, heat/cold sources, direct sunlight, etc.) Storing cartons in direct sunlight or exposing them to other heat or cold sources can affect acclimation by causing thermal expansion and contraction. Protect your flooring from heat and cold sources by directing air registers to position airflow away from the flooring. Prevent direct sunlight by blocking out windows with plastic, cardboard, or window treatments, or other protection for a minimum of 48 hours before, during, and 48 hours after installation.

INSTALLATION

LAYOUT

MatWorks flooring has arrows on the back to show the manufacturing direction. Install the flooring with the arrows pointed in the same direction or quarter-turned to maintain a consistent orientation. Mix flooring from five (5) cartons or more at a time and separate prominent visual characteristics so they are not grouped together during installation.

Balance the Installation

Resilient flooring should be installed with equal widths (long side of the flooring) of the last rows on opposite sides. This also applies to the lengthwise distance of the last row when the flooring is installed in a repeating pattern. For plank flooring installed in a random pattern, the installation may start along the longest straight wall for smaller areas or be installed centered with equal distances on either side.

Determine the Layout

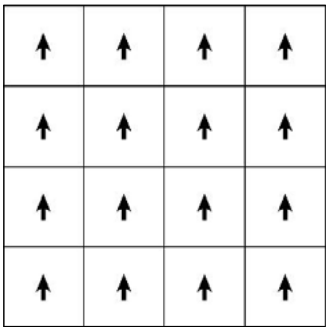
Establish the layout and tile direction following the architect's drawings or the floor layout provided. When the floor layout or direction is not provided, dry lay a carton of flooring and review it with the facility management or owner using these general guidelines.

- The layout should align the long axis of planks/tiles towards the main windows and/or parallel to the longest wall.
- The layout should also align the long axis of planks/tiles in the direction of traffic in corridors when possible.
- Utilize the recommended patterns to achieve the desired visual effect.

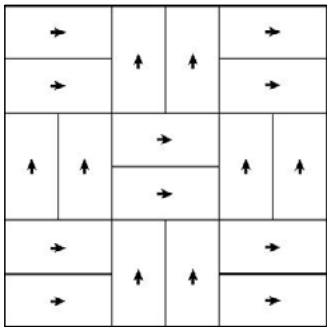
RECOMMENDED LAYOUTS

Here are the layout recommendations for each product size

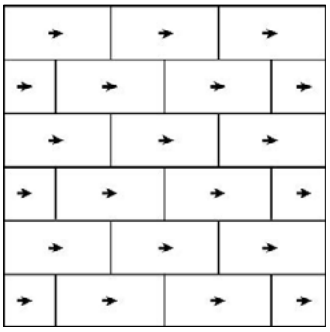
12" x 24" Regular Tiles



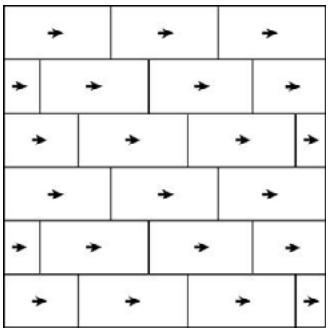
Straight



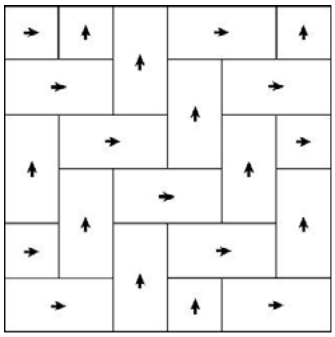
Quarter Turn



Brick (1/2 Step)

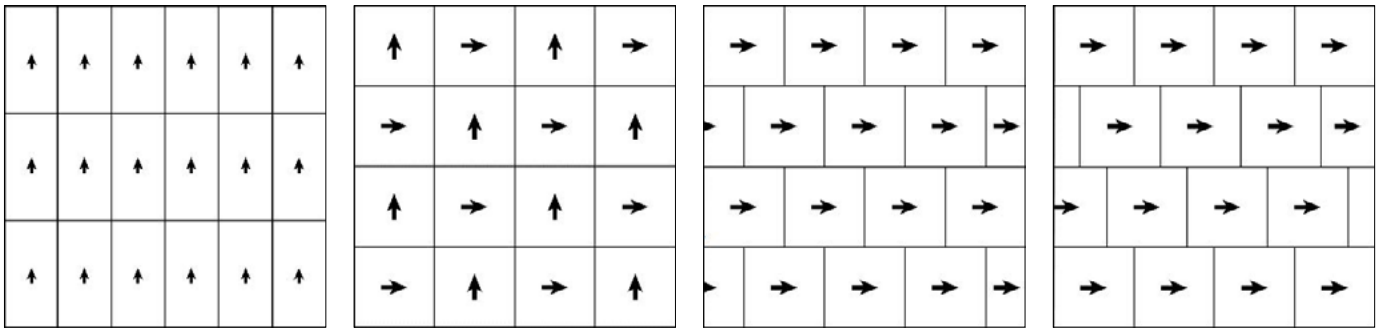


Stagger (1/3 Step)



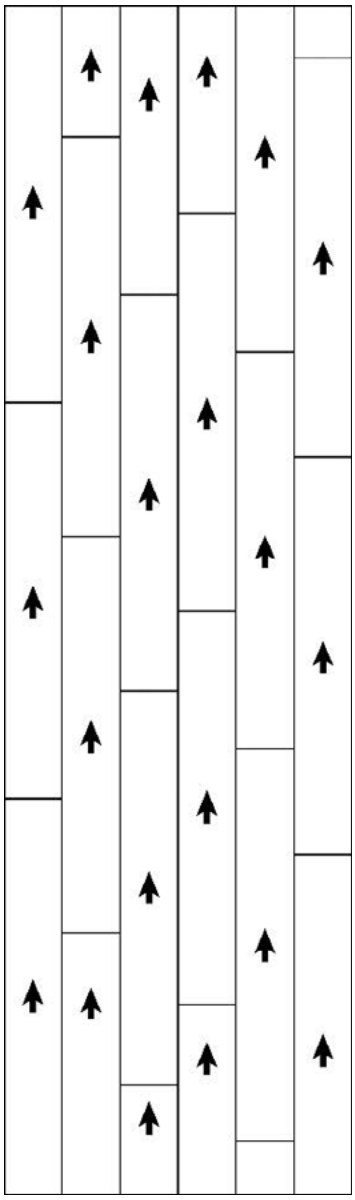
Herringbone

20” x 20” Square Tiles

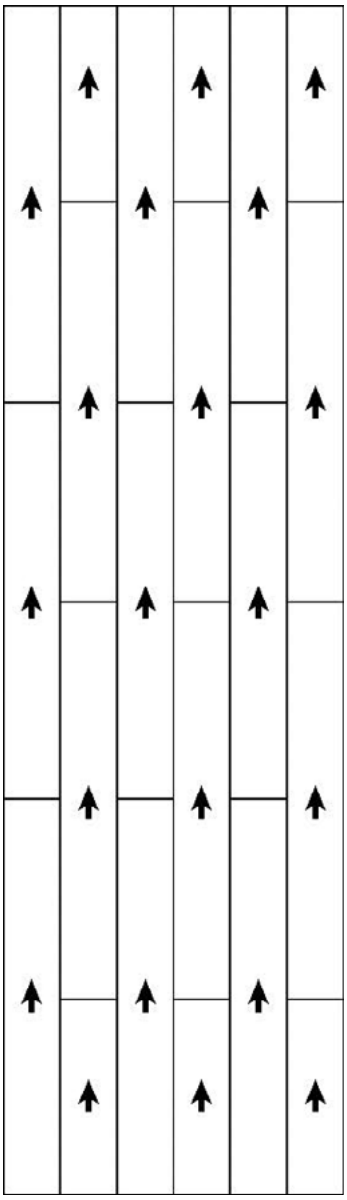


LUM woven vinyl flooring should be installed in a Quarter-Turn, Brick, or Stagger pattern. Before installation, confirm the product layout with the architect, designer, or owner to ensure it fulfills their requirements.

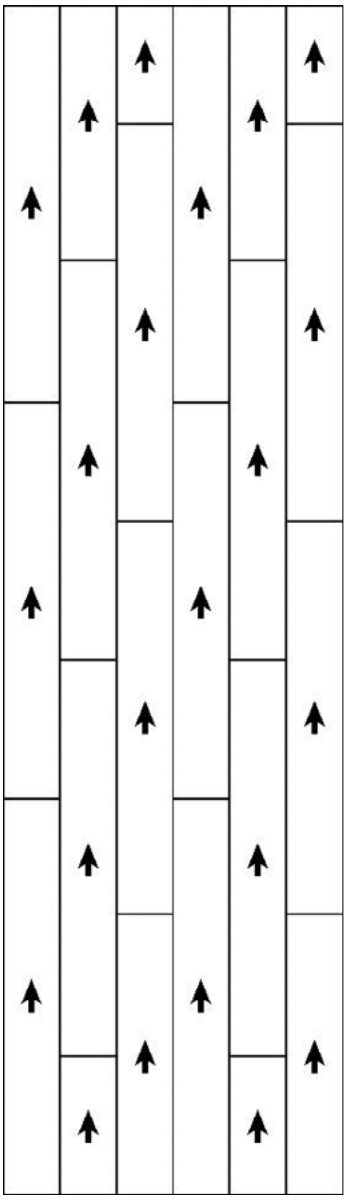
6” x 48” Planks



Random



1/2 Step



1/3 Step

Plank End Joint Spacing
End joints should be staggered a minimum of 6-8 in. (15-20 cm) to maintain a random visual appearance or as specified, if there is a pattern. Avoid aligning every other end joint and creating an H pattern unless specified.

Seam Alignment
Plan the layout so that the flooring seams or joints do not align with joints or seams in the existing flooring or underlayment panels.

Establish Starting Lines
Once the floor layout has been determined, mark the starting line(s) for the installation.

To mark the starting line(s), measure and mark the center point of each end wall with a pencil.

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

- **CALCULATE** - To calculate the last row width, measure the distance from the side wall to the center mark and divide this distance (in inches) by the flooring width (in inches) to determine the number of full pieces and the remainder. If the value of the remainder is less than 0.5 (1/2 the flooring width), you should move the starting line ½ the width of the flooring to the left or right. Moving the starting line will increase the width of the last row, provide a better visual appearance, and make the floor easier to install.

- **DRY LAY** - Dry lay the flooring from the centerline to the wall, running parallel to the long direction of the flooring, to determine the width of the last row. Avoid having border pieces less than 3" (7.6 cm) wide. If the border is less than 1/2 the width of the floor, move the starting line 1/2 the width of the flooring to the left or right. This will "balance" the room and provide for a larger cut piece at the wall.

- **MARK STARTING LINES** - Connect the center points or adjust the center point over ½ the width of the flooring and strike a chalk line or use a straight edge to connect the starting points down the center of the room. For installing patterns where you want to balance the room on all sides, repeat this process to establish a perpendicular start line in the room's length.

- **3-4-5 MEASUREMENT** – When balancing the flooring across the width of the room and in the length of the room, use the Pythagorean Theorem to make sure the bisecting start lines are at 90 Degrees (perpendicular) to each other. The Pythagorean theorem states that A2 + B2 = C2. To begin, measure exactly three (3) ft. (or a multiple of 3 ft., 3 – 6 – 9, etc.) from the intersecting point on the shorter chalk line and make a thin pencil mark. Measure four (4) ft (or the same multiple of 4 ft., 4 – 8 – 12, etc.) from the same intersecting point on the longer chalk line and make a thin pencil mark. Now measure the distance from the two marks, and it should measure exactly five (5) ft. (or the same multiple of 5 ft., 5 – 10 – 15, etc.) as the other measurements. If it does not come out to the exact length, the lines are not perpendicular and must be adjusted. You are ready to begin the installation once the starting line(s) are marked and positioned to balance the installation and are perpendicular to each other.

PRE-INSTALLATION

Inspect Materials

Carefully inspect all materials as you install. Before starting, confirm that the flooring materials are the correct color, size, and quantity, and that they have a single dye lot for each room or floor. Immediately report any damage or discrepancies, and do not install flooring until all issues are resolved.

Final Review of Jobsite Conditions

Make a final inspection and confirm that all jobsite conditions are in specification, the materials are correct, and that the jobsite and flooring are acclimated together before beginning the installation. Once the installation has started, you have accepted these conditions.

Precautions for Occupied Installations

Take necessary precautions to minimize noise, odors, dust, and disturbance to occupants during installation.

Flooring Layout

Install the flooring as specified in the architect's drawings or as agreed with the GC and/or owner. Ensure that all installed flooring runs in the same direction or is quarter-turned as specified.

Mix Cartons

Mix five (5) or more boxes of flooring from the same Dye Lot, ensuring that the flooring is spread out and positioned with distinct and repeating characteristics so that they are not grouped together to provide a random appearance.

DURING INSTALLATION

Apply Adhesive

Spread the adhesive according to the adhesive label instructions for the specific jobsite conditions. Spread the adhesive uniformly. For trowel-applied adhesives, hold the trowel at a 45°-65° angle. Avoid skips, puddles, or sharp turns with the trowel. Apply adhesive over the floor, working your way from the far end of the room to the door. MatWorks recommends using the tacky (semi-wet) or wet set installation method as specified on the current adhesive technical data sheet or bucket label. The wet set installation method provides the strongest bond, minimizing floor movement and gapping. Allow the specified open time for the adhesive, based on the site conditions. Refer to the adhesive instructions for specific requirements. Apply only as much adhesive as can be covered and rolled during the adhesive's working time. Scrape up adhesive that has reached the maximum open time.

Cleaning Adhesive

If adhesive gets on the surface of the flooring or other items, immediately remove it using a clean cloth with soap and water. If the adhesive has dried, follow the adhesive manufacturer's cleanup instructions or use a small amount of 70% Isopropyl alcohol or mineral spirits on a clean cloth to remove it. Always test the cleaner on a scrap piece of flooring or in an inconspicuous area for colorfastness or other concerns before cleaning. Try a different cleaner if an issue occurs. Rinse the surface with clean water and dry it after the cleaning process is complete.

Install Flooring

Once the adhesive has been open for the proper time, install the first 2-3 rows of flooring, aligning them to the starting lines using light, consistent, and even pressure. Do not compress or tightly fit the flooring together, as this can cause buckling or edge lifting issues. Ensure the starting rows are straight and the flooring is joined tightly together without gaps or misalignment. Carefully place additional flooring, maintaining a gap-free fit and proper alignment. If there is a pattern, pay close attention to the proper positioning of each piece, maintaining consistent and equal spacing, and ensuring the correct tile direction.

Continue the installation and trim the floor neatly and net to fixtures, cabinets, and built-in furniture, and trim to equipment anchors, air registers, floor outlets, abutments, walls, columns, or other interruptions of the floor surface. Extend flooring into toe spaces, door reveals, recesses, closets, and similar openings unless otherwise indicated. Always place factory edge to factory edge and cut edges against the wall or abutment.

Cutting the Floor

Begin by aligning a straight edge or speed square along the cut line on the flooring to cut the floor to the desired length. Score the top side of the flooring with a sharp utility knife along the straight edge or square. When you have cut through the wear layer, bend the flooring along the cut and snap downward. For intricate cuts or fitting, use a jigsaw with a carbide blade. Alternatively, a heat gun can be used on the low setting to help soften the flooring, making intricate knife cuts easier. Carefully apply the heat to the area to cut and trim the flooring to neatly fit vertical obstructions. Allow the heated flooring to cool to room temperature before installation. Always follow the equipment manufacturers' current instructions and safety precautions.

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

Adhesive Transfer

Frequently check the back of the flooring to ensure complete adhesive transfer and coverage (at least 80% coverage).

Roll Flooring

Immediately roll the flooring using a 100-lb., 3-section roller after each area is installed, within the working time of the adhesive. Frequently check the back of the flooring to ensure complete adhesive transfer and coverage (at least 80%), and verify that the adhesive trowel ridges are flattened during rolling. Slowly and carefully roll the floor, North to South in the room, and then East to West, overlapping each pass by 50%. Check the completed floor throughout the working day to ensure the edges are tight together without any gaps or buckling, there is a proper bond, and no edge lifting. Reroll and weigh down any areas of concern overnight. Roll the perimeter and under all toe kicks around columns and other vertical surfaces with a hand roller.

Restrict Access to Installation Area

Close working spaces to non-essential traffic before, during, and after installation, as specified. Isolate and protect the installation from traffic as specified by the adhesive used or as follows:

- **FOOT TRAFFIC** - Wait 24 hours or longer after installation to allow foot traffic on the new floor.
- **ROLLING TRAFFIC OR HEAVY POINT LOADS** - Wait 72 hours or longer after installation to allow rolling traffic or heavy point loads on the new floor.

POST-INSTALLATION

Post-Installation Cleaning

The Flooring contractor is responsible for post-installation cleaning. Perform dry soil removal followed by low-moisture damp mopping if needed. Protect the floor from traffic while the cleaning process is underway and allow traffic once the floor is clean and the surface is dry.

- **DRY SOIL REMOVAL** - Remove loose soil and debris with an appropriate broom, shop vacuum, or floor vacuum.

- **WET SOIL REMOVAL** - Use a spray applicator or other suitable low-moisture method to apply a properly diluted neutral pH cleaner (7-9 pH) (Diversey Stride or similar) to the floor in a manageable area. The spray application minimizes surface dampness and promotes quicker drying. Use a well-wrung microfiber flat mop with the properly diluted neutral cleaner if a spray applicator or other suitable low-moisture method is unavailable.

- **CLEAN FLOOR** - Agitate the cleaner solution with a microfiber flat mop over the floor. Replace the microfiber pad as it becomes soiled. Clean additional sections of the floor until the entire area is clean. Alternatively, use an auto scrubber with a 3M Red pad or an equivalent pad or brush, and apply a properly diluted neutral cleaner at the low moisture flow setting with the vacuum system engaged. Use a minimal amount of cleaner solution.

- **RINSE FLOOR** - Rinse the floor with water applied with a spray applicator and remove any residue with a dry microfiber flat mop.

- **DRY SURFACE** – Dry the floor using dry microfiber mops or towels. Use fans to speed up the drying process.

- Wait 7 days or longer after installation before using routine wet maintenance on the floor.

Post-Installation Inspection & Documentation

Visually inspect the floor installation to ensure the seams are tight without gaps or compression, properly spaced or staggered, the rows are straight and aligned with the area, and the overall appearance is satisfactory. Promptly correct any discrepancies. Take photographs and ensure that any required documentation is signed and stored to turn over to the GC or owner upon completion of the installation.

Post-Installation Floor Protection

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

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

Reach out to your representative to get started today.

As a company with a 100% customer satisfaction guarantee, we are committed to helping you bring your vision to life. From design and logistics to long-term performance, we provide comprehensive support throughout the entire process, ensuring a seamless and worry-free experience that delivers a complete flooring solution for your brand.

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