

GENERAL

These instructions cover all fully adhered installations of Mannington Luxury Vinyl Floors (LVF) – available in both Tile (LVT) and Plank (LVP). This includes: Divergent, Nature's Path and Nature's Path Select vinyl flooring. All recommendations are based on the most recent available information. The information on these sheets provides general guidelines. For complete details consult Mannington's General Installation Guide or visit our website manningtoncommercial.com. These instructions and recommendations must be followed for a satisfactory installation.

MAKE SURE YOU INSPECT LVF PRIOR TO INSTALLATION. NO CLAIMS WILL BE HONORED IF PLANKS OR TILES ARE INSTALLED WITH VISIBLE DEFECTS. READ ALL INSTRUCTIONS PRIOR TO BEGINNING INSTALLATION.

The installation of Mannington QuickStix LVF is straightforward and similar to the installation procedures that apply to all quality LVT floors. Good preparation is essential for a trouble-free installation. Do not install Mannington QuickStix LVF until jobsite testing and subfloor preparations are finished and the work of all other trades is complete. Site conditions must comply with the relevant building codes and local, state and national regulations.

- Mannington QuickStix LVF is recommended for use over properly prepared concrete, suspended wood, metal and other suitable substrates.
- Never install Mannington QuickStix LVF over residual asphalt type (Cutback) adhesive as "Bleed Through" and bonding failure may occur.
- Mannington QuickStix LVF is not suitable for external installation or unheated locations.
- Mannington flooring, jobsite and subfloor must be acclimated to a stable condition before installation (See Job site testing).
- Immediate foot traffic and full use is allowed once the QuickStix LVF is completed.
- Mannington LVF flooring should remain at a temperature between 55°- 85° F (13°-29° C) during its service life.

MATERIAL RECEIVING, HANDLING & STORAGE

1. Immediately remove all shrink wrapping and verify materials delivered are correct style, color and quantity.
2. Report discrepancies immediately to Mannington Customer Service at 1 800 241.2262 EXT 2 Claims for installation of products installed with visual defects or incorrect style will not be honored.
3. Store all materials off the floor (keep cartons flat) in a weather-tight enclosure between 55°- 100° F (13°-38° C).
4. Acclimate LVF, Primer and jobsite to a stable condition between 65°- 85°F (18°- 29°C) and 50% +/- 10% RH for 48 hours before, during and after installation. Acclimate all materials onsite and off stack tile/ plank cartons to a single layer keeping cartons flat. Temporary heating and cooling can be used if permanent HVAC is not operational. If a system other than the permanent HVAC source is utilized, it must provide proper control of both temperature and humidity to recommended or specific levels for the appropriate time duration.
5. LVF should not be stored close to exterior walls, in direct sunlight or near HVAC vents.

JOBSITE TESTING AND CONDITIONS

1. Before jobsite testing, the building envelope must be sealed (walls, roofing, windows, doorways etc., installed).
2. Anticipated environmental conditions must be maintained at 65°F- 85°F (18°C +/- 12°C) and 50% +/- 10% RH a **minimum of 48 hours** before and during testing (ASTM F 710).
3. Test sites must be properly prepared and protected for the duration of testing to achieve valid results.
4. Surface Flatness for all Subfloors: The surface shall be flat to 3/16" (4.7 mm) in 10 ft. (3,050 mm) and 1/32" (0.8 mm) in 1 Ft. (305 mm). To check flatness, place a 10 ft straight edge, string line, laser level or use another recognized industry method on the surface to measure the undulation.
5. Moisture Testing: Perform either the preferred In-situ Relative Humidity (RH) Test (ASTM F2170) or the acceptable Moisture Vapor Emission Rate (MVER) Test (ASTM F1869).
6. QuickStix is warranted up to 99% RH and 18 pounds MVER when all specified requirements are met. Perform 3 tests for the first 1000 sq ft and one additional test per 1000 sq ft thereafter. All readings must be documented and stored for warranty registration.
7. Alkalinity: Must test surface alkalinity (ASTM F710). Up to 12 pH is acceptable with the application of one coat of Mannington Premium Universal Primer. When pH is above 12, highly porous or light weight concrete, apply a second coat of Mannington Premium Universal Primer.
8. Water Drop: Randomly check concrete subfloor for porosity using the drop water test. Place a dime size of clear water directly onto the concrete subfloor. If the water droplet does not dissipate within 60 to 90 seconds the subfloor is considered non-porous.
9. Subfloor must be clean (free of dirt, sealers, curing, hardening or parting compounds or any substance that may stain or prevent adhesion), smooth, flat, sound, fit for purpose, free of movement.

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For more information, please contact Mannington Technical Services at 800 241 2262 Ext. 3 or visit www.manningtoncommercial.com.

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MANNINGTON PREMIUM UNIVERSAL PRIMER

The use of Mannington Premium Universal Primer is required for the installation of Mannington QuickStix products. All bond warranties will be voided if the Mannington primer is not used, as required.

FOR USE ON: above and below grade concrete, gypsum, and wood substrates and all patching and leveling compounds. Before the application of Mannington's primer the substrate must be prepped following ASTM F710. The floor must be flat, smooth, and free of any contaminants. Follow sub-floor condition requirements. Thoroughly clean the floor by sweeping, vacuuming, and/or mopping to remove all dust and debris.

APPLICATION: The use of a smooth napped or microfiber roller is recommended. Apply a smooth even coat of primer using slight pressure. Avoid leaving puddles or heavy roller bead/ lines. Cover all areas leaving no bare or dry spots rolling in both directions. Allow the primer to completely dry. Normal dry time will vary, approximately one half hour- one hour, check for dry to the touch. If needed allow more time before installation starts and/or before applying second coat, if required. Clean up all spills or over application to walls or base while the product is wet. Use clean soapy water to remove all excess.

TIPS:

- In larger areas the use of an 18" wide roller is recommended to speed up the application process.
- Use a paint brush or small roller to cut in at the doorways and walls if necessary
- For Non-porous substrates such as Terrazzo, Glass, Metal, and Polished Concrete, Mannington's primer is not required. Remove all wax, surface contaminants. A bond test is required.

SUBFLOOR PREPARATION

Concrete Subfloors

1. Concrete subfloors must be finished and cured without additives, curing compounds, hardeners or surface treatments that may prevent proper bonding of the flooring materials (ACI 302.1 and ASTM F710).
2. Concrete subfloors shall not consist of lightweight concrete or gypsum with less than 105 lbs. /cubic foot density (3000 psi). Follow ASTM F2678.
3. Below and On-grade concrete subfloors must have a suitable vapor retarder properly installed beneath the slab per ASTM E1745. Crawlspace and basements directly beneath the new floor installation should be maintained with a relative humidity +/- 10% of the room relative humidity where the flooring is installed. This can be accomplished by proper ventilation and air circulation or using a dehumidifier. Always follow manufacturers' written recommendations for the use and installation of their proprietary surface preparation materials.
4. Remove all existing floor coverings and adhesives/residues, marking paint, permanent markers, crayons, and all other potential stains from the concrete surface before installing new flooring. Never mark the back of the flooring. Removal of old adhesives must be performed by mechanical means: scraping, scarifying, grinding, shot/bead blasting, etc. The use of adhesive removers or solvents in the abatement or removal of existing or old adhesives is prohibited and will void all warranties. Contact Mannington Commercial for needed procedures.
5. Expansion joints, isolation 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 based upon intended usage and aesthetic considerations
6. Leveling and Patching: Surface cracks, grooves, depressions, control joints or other non-moving joints, and other irregularities shall be filled or smoothed with high quality Moisture Resistant Portland cement based patching or underlayment compound. Caution: Do not lightly skim coat highly polished or slick power troweled concrete surfaces. A thin film of floor patch will not bond to a slick subfloor and may become a bond breaker causing tiles to release at the interface of the subfloor and patching material.
7. Always follow manufacturers' written recommendations for the use and installation of their appropriate surface preparation material.

NOTE: It is not recommended to install QuickStix LVF over concrete slabs with a history of hydrostatic conditions. Mannington also will not assume responsibility for floor covering failure due to hydrostatic pressure or moisture vapor emission exceeding the requirements set forth. The final responsibility for determining if the concrete is dry enough for installation of the flooring lies with the floor covering installer.

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Wood

All wood substrates must be primed with Mannington Premium Universal Primer.

1. Wood subfloors require an underlayment (double layer construction) with a minimum total thickness of 1" (25 mm). Use minimum ¼" (6 mm) thick APA rated "underlayment grade" plywood with a fully sanded face or other underlayment panel that is appropriate for the intended usage. Install and prepare panels and seams according to the manufacturers' instructions.
2. Wood Subfloors and underlayment panels shall have the moisture content tested using a suitable wood pin meter. Readings between the wood subfloor and underlayment panel should be within 3% and have a maximum moisture content of 14% or less.
3. Many times wood panel subfloors are damaged during the construction process or are not underlayment grade. These panels must be covered with an appropriate underlayment. Underlayment panels are intended to be used to provide a smooth surface on which to adhere the finished floor covering. It should be understood that underlayment panels cannot correct structural deficiencies.
4. Panels intended to be used as underlayment should be specifically designed for this purpose. These panels should have a minimum thickness of ¼". Any panels selected as an underlayment must meet the following criteria:
 - Be dimensionally stable
 - Have a smooth, fully sanded face so graining or texture will not telegraph through
 - Be resistant to both static and impact indentation
 - Be free of any surface components that may cause staining such as plastic fillers, marking inks sealers, etc.
 - Be of uniform density, porosity and thickness
 - Have a written warranty for suitability and performance from the panel manufacturer or have a history of proven performance
5. Any unevenness at the joints between panels must be sanded to a level surface. Gaps between panels, hammer indentations, and all other surface irregularities must be filled and sanded.
6. Particleboard, chipboard, construction grade plywood, any hardboard and flake-board are not recommended as underlayment. All have inadequate uniformity, poor dimensional stability, and variable surface porosity. Mannington LVT Floors will not accept responsibility for adhered installation over these subfloors. QuickStix LVF can be installed over all wood and wood composition panels provided that they are smooth, flat, structurally sound and free of deflection. If the surface of the subfloor is not smooth, a ¼" underlayment should be installed over the subfloor. In all cases, the underlayment manufacturer or underlayment installer is responsible for any underlayment warranties.

Existing Floor Covering

To achieve maximum product performance it is always best to remove existing floor covering and prepare the substrate before installing new products in commercial settings. Existing flooring can adversely affect the performance properties of the new flooring, such as indentation or adhesive bond. It is the floor covering retailer's or installer's responsibility to determine if the existing resilient floor covering is suitable as an under floor for installation. If there is any doubt about the suitability of the existing floor, remove it or cover it with an appropriate underlayment.

The existing resilient flooring should meet the following conditions:

- Be fully adhered (full-spread) and well bonded to a suitable substrate
- Consist of a single layer only
- Be free of all evidence of alkaline salts, hydrostatic pressure, or moisture from the substrate
- Not be a foam-backed or thickly cushioned product
- Not be a perimeter-fastened or loose-laid product
- Not be asphalt tile, self-stick tile, rubber tile, or surface containing residual asphalt-based adhesives

LAYOUT: Layout shall be specified by end user, architect or designer.

1. Establish center marks and determine start point to balance installation in room and have equal tile widths on opposite sides of room. This can be facilitated by dry laying tiles and marking base lines.
2. Install rows to chalk line making sure tiles are precisely aligned with chalk line and adjacent tiles. Start straight and stay straight.
3. Pre-cut all wall and trim piece before the removal of the protective paper. 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.

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INSTALLATION PROCEDURES

Before starting the installation of the Mannington QuickStix LVF, insure the previous preparations have been accomplished. Start of flooring installation indicates acceptance of current subfloor conditions and full responsibility for completed work. Acclimation: Acclimate tiles (keep cartons flat), adhesive, jobsite and subfloor to a stable condition between 65°- 85° F (18°-29° C) and 50% +/- 10% RH for a minimum of 48 hours before and after installation.

Mannington LVF products have arrows imprinted on the back. Lay all arrows pointing in the same direction. Mannington LVF comes in plank and square tile formats. Mannington LVF can be laid out to run either parallel or diagonal to the room or primary wall. Tiles should be installed running in the same direction (block or staggered), when quarter turned, arrows should alternate. Plank flooring should have end joints offset by at least 6" and staggered to create a random appearance that avoids alignment of end joints. (All arrows should be pointing in the same direction).

- **Flooring Materials:** Check quantities of Mannington LVF are sufficient for area to be installed. Check tile for visual defects before installation. Installation of flooring acknowledges acceptance of materials.
- **Inspect Substrate:** 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.
- **Determine Layout and chalk starting lines**
- **Start installing LVF by peeling QuickStix protective film and adhering the tile / plank, keeping the LVF straight to the pre marked lines. Keep each section of the subfloor free of debris, dust etc. as you install.**
- **Make all wall and doorway cuts before removing the protective film. Place a directional arrow on the back of all cut pieces.**
- **To properly align the product install the plank butt/ short seam first making sure to fit the inside corner first, then slightly tilting the plank align the length with the sides touching and making contact with the substrate fit into place. Do not apply or rub the plank if the tile/plank is out of place. Readjustment will be difficult once the adhesive has made contact with the substrate.**
- **Make all finish cuts. Always leave the protective film on the product during the cutting stage. A good practice is to use a separate plank with the protective films touching as a cutting base to prevent cutting damage to the floor and keeping the adhesive film from transferring.**
- **Continue with the installation. Covering the entire floor.**
- **The floor must be rolled in both directions using a 100 lb 3-section roller. Roll the floor as soon as conditions permit. Roll floor again 90 degrees to the first row to assure good transfer of QuickStix adhesive to the substrate.**
- **Clean up all debris as you work. Caution not to allow the adhesive film to make contact with the newly installed flooring surface. Clean up immediately to keep from attracting dirt.**
- **Immediate foot traffic and point and rolling loads can be utilized after installation.**
- **Wait 5 days after installation before washing finished floor.**
- **Adjacent Surfaces Protection:** Protect adjacent work areas and finish surfaces from damage during product installation.
- **Flooring Protection:** Mannington LVF should be the last material installed to prevent other trades from disrupting the installation or damaging the floor.

Helpful Tips

- **When making wall/end cuts on the LVF a guillotine cutter similar to a Bullet tool cutter is recommended. Always leave protective film on when making cuts.**
- **If needed, when placing the tile/ plank, the use of a slight mist of water on the substrate will help in adjusting the product. Use clean water; the spray bottle can be purchased from your local hardware store.**
- **Do not allow the adhesive film to make contact with the walls, baseboards or any other object except the intended sub-floor. Clean all areas with the appropriate adhesive remover.**
- **Dispose of release paper as you install, keeping immediate work area clean.**
- **Keep cut pieces and scrap flooring off installed surface. Adhesive residue on flooring surface can appear as visible scuffs as it attracts dirt.**
- **Any adhesive residue on flooring surface can be easily removed using a cloth dampened with mineral spirits or denatured alcohol. Never pour cleaning agent directly onto the LVF. Always apply to a clean white cloth first.**

SPECIAL CONSIDERATIONS

1. **Radiant Heat:** Mannington Commercial LVF can be installed over Radiant heating (hydroponic) systems. The maximum temperature of the subfloor surface must not exceed 85°F (29°C). Before installing flooring products over newly constructed radiant-heating systems, operate the system at maximum capacity to force any residual moisture from the cementitious topping of the radiant-heating system. The heat must be turned off 48 hours before, during and 48 hours after installation on new and existing systems.
2. **Direct Sunlight:** Installations in areas where there is direct sunlight exposure for long periods of time should utilize window treatments prior to and during the installation, and for 48 hours after the installation.
3. **Concrete Curing, Sealing, Hardening or Parting Compounds:** Mannington recommends wet curing concrete for 7 days if at all possible to avoid the use of Curing, Sealing, Hardening or Parting Compounds which may cause installation failures.
4. **Protecting New Installations:** New Installations should be protected from all construction or trade dust and debris with proper floor protection.

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MAINTENANCE

- For detailed recommendations, see the Mannington Maintenance Instructions.
- Use non-staining matting system at exterior doors that is appropriate for soil load and weather conditions.
- Use appropriate floor protectors, glides and wheels and do not drag or slide objects across the surface of the floor.
- Do not use abrasive cleaners that can scratch the floor surface or detergent cleaners that leave a residue.

REPAIRS

Damaged planks/tiles can be removed and replaced. Identify the problem area, and make sure there is matching replacement material.

1. Use a sharp utility knife to cut the existing LVF out. Work from the edges in, careful not to damage adjacent flooring.
2. Pry in the center of the damaged plank to pull the pieces out. (you may find it helpful to cut into smaller strips, for easier removal)
3. Scrape the area clean removing all adhesive film, and debris.
4. Patch and prime the area if necessary.
5. Remove release paper, insert new LVF, and then roll the replacement area ensuring a tight bond.

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