

**GENERAL
INFORMATION**

These instructions cover all fully adhered installations of Mannington Commercial LVT; **Assurance Squared**, **Create**, **Nature's Paths**, **Nature's Paths Select** and **Walkway** luxury vinyl flooring. Nature's Paths **LockSolid** utilizes a proprietary locking system that is installed as a "floating" floor and does not require adhesive. All recommendations are based on the most recent available information. The information on this sheet provides general guidelines. For complete details consult Mannington's Professional Installation Handbook or visit our website at manningtoncommercial.com. All instructions and recommendations must be followed for a satisfactory installation.

1. The floor covering, adhesive, and room temperature must be kept at a minimum temperature of 65°F or warmer for at least 48 hours before, during, and 48 hours after installation. Maximum temperature must not exceed 100° F.
2. Install Mannington Commercial LVT only after the jobsite has been cleaned and cleared of other trade apparatus that may damage a finished tile installation.
3. Always check the cartons to assure the pattern number is correct. To minimize shade variation, mix and install tiles/planks from several different cartons.
4. All subfloor / underlayment patching must be done with a non-shrinking water resistant Portland cement patching compound such as Mannington MVP-2023.
5. Never install Mannington Commercial LVT over residual asphalt-type (cut back) adhesive. It can bleed through the new floor covering
6. Mannington Commercial LVT is to be adhered with Mannington Commercial adhesives; Assurance Squared, Nature's Paths, Nature's Paths Select and Walkway shall be adhered with Mannington Commercial V-82, M-Guard V-88 or V-95 Adhesive. Create shall be adhered using Mannington MT-711 or V-95 adhesive.

**SUBFLOOR
INFORMATION**

Careful and correct preparation of the subfloor is a major part of a satisfactory resilient floor covering installation. Roughness or unevenness of the subfloor will telegraph through the new floor covering, resulting in an unsightly surface and excessive wear on high spots. Proper subfloor preparation and suitable underlayment installation are essential for a trouble-free job.

A. Wood Subfloors**1. GENERAL**

All wood floors must be suspended at least 18" above the ground. Adequate cross-ventilation must be provided and the ground surface of a crawl space must be covered with a suitable vapor barrier. Wood subfloors directly on concrete or installed over sleeper construction are not satisfactory for the installation of Mannington Resilient flooring products. Wood subfloors must be covered with a minimum ¼" or heavier underlayment rated panel to assure a successful finished flooring installation.

2. UNDERLAYMENT

Many times wood panel subfloors are damaged during the construction process or are not of underlayment grade. These panels must be covered with an approved underlayment. Underlayment panels are intended to be used to provide a smooth surface on which to adhere the finished floor covering. It must be understood that underlayment panels cannot correct structural deficiencies.

Particleboard, chipboard, construction grade plywood, any hardboard and flakeboard are not recommended as underlayment for fully adhered installations. All have inadequate uniformity, poor dimensional stability, and variable surface porosity. Mannington Resilient Floors will not accept responsibility for adhered installation over these subfloors. Nature's Paths LockSolid can be installed over all wood and wood composition panels provided that they are smooth, flat, structurally sound and free of deflection. This includes plywood, particleboard, oriented strand board (OSB), flakeboard and wafer board. 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 all underlayment warranties.

3. UNDERLAYMENT REQUIREMENTS

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 the graining or texturing will not show through
- Be resistant to both static and impact indentation

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- 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

Any unevenness at joints between panels must be sanded to a level surface. Gaps between panels, hammer indentations, and all other surface irregularities must be patched with Mannington 2023 or equivalent.

B. Concrete Subfloors

1. Concrete subfloors must be dry, smooth, and free from dust, solvent, paint, wax, grease, oil, asphalt sealing compounds and other extraneous materials. The surface must be hard and dense, and free from powder or flaking.
2. New concrete slabs must be thoroughly dry and completely cured (at least six weeks). Curing agents, surface hardeners and other additives may cause adhesive bonding failure. These should be removed by sanding or grinding.
3. All concrete slabs must be checked for moisture before installing material. Details for moisture testing can be found in the Mannington Professional Installation Handbook. Anhydrous Calcium Chloride tests conducted according to ASTM F 1869 and/or In Situ Relative humidity tests as conducted according to ASTM F 2170 are the most commonly accepted test procedures.

Mannington Commercial V-82 adhesive shall be used for installation of Mannington Commercial LVT on porous substrates including concrete that is dry per ASTM F-1869 3 lbs maximum MVER or ASTM F-2170 75% maximum relative humidity. Mannington M-Guard V-88 adhesive is recommended for higher moisture tolerance of 8 lbs maximum MVER or 80% relative humidity. M-Guard V-88 adhesive will not correct pre-existing moisture problems in older concrete subfloors. Mannington Commercial V-95 adhesive shall be used for non-porous substrates or under hospital beds, heavy rolling loads or where high performance is needed.

It is recommended not to install Nature's Paths LockSolid over concrete slabs with a history of excessive moisture or hydrostatic conditions. Concrete subfloors that exceed 8 lbs MVER as determined with the Calcium Chloride test (ASTM F-1869) or 95% RH as determined by the Relative Humidity test (ASTM F-2170) should be considered excessive with regards to moisture emissions. Excessive moisture vapor emissions may contribute to an unhealthy indoor environment.

Mannington will not assume responsibility for floor covering failure due to hydrostatic pressure or moisture vapor emission. The final responsibility for determining if the concrete is dry enough for installation of the flooring lies with the floor covering installer

4. Holes, grooves, expansion joints and other depressions must be filled with Mannington 2023 patching and leveling compound (or equivalent), and trowelled smooth and feathered even with the surrounding surface.
5. Concrete floors with a radiant heating system are satisfactory, provided the temperature of the concrete floor does not exceed 90°F at any point. Before installing the flooring, the heating system should be turned on to eliminate residual moisture.

C. Existing Resilient Floor Coverings

To achieve maximum product performance, fully adhered Mannington Commercial LVT should not be installed over existing resilient floor coverings. In the rare cases where removal of the existing resilient floor covering is not an option, the existing flooring must be covered with MANNINGTON MVP 2023 used as an Embossing Leveler or other appropriate porous underlayment.

Note: Consult Mannington's Professional Installation Handbook or the Recommended Work Practices brochure from the Resilient Floor Covering Institute for specific instructions on removal of old resilient floor covering. See RFCI website at RFCI.com

WARNING: Do not sand, dry scrape, bead blast or mechanically pulverize existing resilient flooring, backing or lining felt. These products may contain asbestos fibers that are not readily identifiable. Using the above non-recommended procedures on asbestos-containing material can create asbestos dust. The inhalation of asbestos dust may cause asbestos or other serious bodily harm. Smoking greatly increases the risk of serious bodily harm.

**SUBFLOOR
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Nature's Paths LockSolid can be installed over most existing hard surface floor coverings provided that the existing floor surface is well bonded and can be made smooth.

Ceramic tile should be made smooth by applying a cementitious overlay such as patching or leveling compound. When the removal of the existing resilient floor covering is not an option, the existing flooring must be covered with MANNINGTON MVP-2023 used as an Embossing Leveler or equivalent. Existing vinyl floors should not be heavily cushioned and consist of one layer only.

INSTALLATION**A. Assurance Squared, Nature's Paths Select Tile and Walkway Tile Layout**

As with all tile formats, tiles should be "balanced" in the work area. Tiles may be laid squarely in the work area or laid out diagonally in the work area. In either case, the room must be accurately measured to square off the area and to determine the center point of the area. The work area should be divided into quadrants designated by striking chalk lines. It is critical that the intersection of the chalk lines be square at 90°. All border tiles should be of nearly equal dimensions and at least one-half of a tile wide. Careful and precise measurements must be taken during tile layout. Adjust this established line to accommodate a balanced layout and then transpose this line to a comfortable width away from the starting wall (approximately 2' to 3' wide). Apply the adhesive in this area and begin installing the tiles. Lay all tiles in the same direction, all directional arrows pointing in the same direction.

B. Nature's Paths, Nature's Path Select & Walkway Plank Layout

It is also important to balance the layout of the plank format. Proper planning and layout will prevent narrow plank widths at wall junctures. Determine layout to prevent having less than ½ plank width or very short length pieces. As with all plank products, lay the long dimension of the plank parallel to the long dimension of the work area. Accurately measure the room to determine the center line, adjust this established line to accommodate a balanced layout and then transpose this line to a comfortable width away from the starting wall (approximately 2' to 3' wide). Apply the adhesive in this area and begin installing planks.

C. Combinations – Nature's Paths Select Tile & Plank and Walkway Tile & Plank Layout

The modularity of Mannington Commercial Nature's Paths Select and Walkway LVT allows for interesting and decorative combinations of tile and planks. When determining proper layout for this custom installation it is important to consider the dimensions of the modular "design unit" and then balance the design unit in the work area. Careful and precise measurements must be taken to insure success with a combination design.

D. Create Layout

The unique sizes and shapes of the Mannington Commercial Create allow for many interesting layouts. Create is available in 9" X 9" squares, 18" X 18" squares, 9" X 18" rectangles as well as Circles and Diamonds. The modular size of the square and rectangles can be combined or used separately. The area of each 9" X 9" tile is 0.56 square foot; 18" X 18" is 2.25 square feet and the 9" X 18" area is 1.13 square feet.

Circles and Diamonds must always be used together. The area of each circle is 0.75 sq ft and the area of each diamond is 0.25 sq. ft. When designing an area the ratio of circles to Diamonds is one-to-one, this means one Circle and one Diamond must be ordered for every Square Foot of the project. Example: Work area is 327 square feet in size, 327 pieces of Circle will be needed, 10 cartons ($327 \div 36 = 9.08$ cartons) 327 pieces of diamonds will be needed, 9 cartons ($327 \div 39 = 8.38$ cartons). *In addition to these product requirements an overage/waste factor of approximately 15% should be added.*

Regardless of which size or shape Create product is to be installed it is important to balance the installation. Square off the work area as with any modular product and establish starting lines.

E. Adhesive Application

Mannington Commercial V-82, M-Guard V-88, MT- 711 or V-95 adhesive is required for adhering Mannington Commercial LVT except Nature's Paths LockSolid to all approved substrates.

Nature's Paths LockSolid utilizes a proprietary locking system that is installed as a "floating" floor and does not require adhesive.

For Assurance Squared, Nature's Paths, Nature's Paths Select and Walkway apply the V-82 adhesive with a 1/16" wide, 1/32" deep, 1/32" apart notched trowel. Begin applying adhesive at the pre-determined chalk lines working in two to three foot increments working towards an exit of the room. The V-82 adhesive has a 30 minute working time. Do not apply more adhesive than can be covered in this time. Set Mannington Commercial LVT into the wet adhesive and never work directly on top of the freshly installed product. Roll each installed section of flooring with a three-section 100 pound floor roller.

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Apply M-Guard V-88 with a 1/16" x 1/16" x 1/16" notched trowel and then immediately roll with a short (3/16") nap point roller (pre-wet roller with adhesive before rolling). Set Mannington Commercial LVT into the wet adhesive and never work directly on top of the freshly installed product. Roll each installed section of flooring with a three-section 100 pound floor roller.

MT-711, used with Mannington Commercial Create, will be applied with a 1/16" wide, 1/16" deep, 1/16" apart notched trowel along the pre-determined starting line. Allow MT-711 to develop tack before installing the Create product into the work area. The adhesive should have sufficient tack to hold the tile in place but not allowed to go completely clear. The non-typical sizes and shapes of the Create product benefit from being installed on a "tacky" adhesive, however, avoid working directly on freshly installed products to prevent shifting and gapping from occurring. Use knee boards if required.

Mannington Commercial V-95 two-part epoxy adhesive is used with Mannington Commercial LVT over non-porous substrates or where high performance adhesive is required. Apply the adhesive with a 1/16" wide, 1/32" deep, 1/32" apart notched trowel and then roll the adhesive ridges smooth with a pre-soaked 3/8" nap roller. Wait 10-20 minutes then install flooring material. Be careful to insure proper transfer as material is laid into the adhesive. Proper adhesive transfer to the backing should be confirmed periodically by lifting the material. (Note that floor temperature directly affects setting time: The warmer it gets, the faster it sets.) Begin applying adhesive at the pre-determined chalk lines working in two to three foot increments working towards an exit of the room. The V-95 adhesive should be provided a 30 to 40 minute open time. Set Mannington Commercial LVT into the wet adhesive and never work directly on top of the freshly installed product. Immediately roll each installed section of flooring with a three-section 100 pound floor roller. Wait approximately 1 hour and then re-roll the installed sections. Do not permit V-95 to dry on the surface of the flooring.

F. Tile & Plank Installation

Assurance Squared, Nature's Paths, Nature's Paths Select and Walkway shall be installed using the "wet set" method. This means that the tiles and planks must be set before the adhesive begins to skin over or set. This requires that the tiles and planks be installed from a wall working backwards towards an exit. Move the established lines to within 2' or 3' of the starting wall and apply the appropriate Mannington adhesive. Set the tile into the wet adhesive; do not slide tiles/planks into place. Thoroughly roll each section of installed product with a 100 pound three-section floor roller. Do not walk or work on newly installed tile except to roll. Continue this process by striking parallel chalk lines, applying adhesive and setting product along the line. Continue this process working towards the exit.

Mannington Commercial LVT tiles have arrows imprinted on the back of the tiles. Lay all tiles in the same direction, all directional arrows pointing in the same direction.

After the appropriate adhesive has been applied, begin laying Mannington Commercial LVT planks along the designated starting line, working back to the starting wall. Planks ends should be staggered in a random manner so as to avoid clustering the end joints. Varying the length of the starting plank can assure sufficient stagger of end joints. End joints should be staggered by at least 4". Pay particular attention to the randomness of the plank layout, avoid establishing a repeating pattern. Continue installing the planks in a random fashion and complete each area before beginning the next. If required use a kneeling board to avoid walking on freshly installed planks.

G. Create Installation

The Create products will be installed into "Tacky Wet" MT-711 adhesive. The adhesive will appear clear in the "Valleys" and cloudy in the "Ridges." Set size and shape as designed and place products firmly against each other. Do not slide the products into position to avoid dragging adhesive into the joints. Even though the Create products are installed into a "tacky wet" adhesive it is still recommended to transpose starting lines along a wall and work towards an exit, staying off of the newly installed product. Roll each completed section with a three-section 100 pound floor roller.

H. Cutting and Fitting Border Planks and Tiles

Mannington Commercial LVT can be cut with a large tile cutter or by using the score and snap technique. Direct or pattern scribe the flooring to fit into complicated, irregular walls or pipes, etc. When installing Nature's Paths LockSolid, maintain a 5/16" gap at all fixed vertical surfaces.

I. Finishing the Job

Fully adhered Mannington Commercial LVT must be rolled with a minimum 100 pound three-section floor roller immediately after installation. Roll the flooring in both directions to firmly seat the tile into the adhesive.

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Cover all exposed edges. Use wood molding or vinyl cove base along all walls, cabinet toekicks, etc. Use transition strips in doorways or where new flooring joins another floor covering. Caulk along tubs, toilet bowls, etc.

Do not wash the floor for 48 hours after installation.

After 48 hours, damp mop to remove residual surface dirt.

Follow appropriate maintenance schedule for Mannington Commercial LVT.

**CAUTIONS AND
MISCELLANEOUS**

- A. Furniture should be moved onto the newly installed floor using an appliance hand truck over hardboard runways.
- B. Do not place heavy items on newly installed floor covering for at least 24 hours after completion of the installation. Heavy furniture should be equipped with suitable non-staining, wide-bearing caster.
- C. Floor covering subjected to excessive heat and light exposure is subject to thermal degradation. Use appropriate precautions to minimize potential affects on the floor covering.
- D. Oil or petroleum based products can result in surface staining. Do not track asphalt driveway sealer or automobile oil drips onto the vinyl floor covering.
- E. Use a non-staining walk off mats. Rubber can discolor resilient floor coverings.