



Hospitality - Guest Rooms – Installation of Modular Carpet & FlexForm Sound 5.0mm LVT with a Single Adhesive, Milliken Mosaic 98 Spray Modular Landscapes Installation Instructions

These instructions are ONLY for use with Milliken Modular Landscapes (FlexForm Sound 5.0mm LVT together with WellBAC Comfort Plus® or Comfort® Cushionback modular carpet) and are for **Hospitality Guest Rooms only.**

For other installations areas or when using separate adhesives for modular carpet and Flexform Sound, please see https://floors.milliken.com/floors/en-us/technical/technical-documentation#MainContainer_C169_Col00 for relevant instructions.

All instructions and recommendations in this guide are based on the most recent information and installation techniques available. Please follow this guide to ensure a trouble free and warranty supported installation.

Always check millikenfloors.com for latest installation, warranty, and maintenance guides. It is the responsibility of the installer to ensure that the most current documents are used during installation.

Installation contractor is responsible for reasonable inspection of the products prior to installation and for maintenance of dye lot integrity during installation. Milliken will not be responsible for visible defects after LVT and/or carpet has been installed.

GENERAL: As a first preference, Milliken strongly recommends the use of a Milliken Certified Installation Contractor to install its products. As an alternate source, companies that can document that they employ installers certified at the C-2 level or higher by the International Certified Floorcovering Installers Association (CFI) are also recognized as viable sources of quality installation.

TILE ORIENTATION: Some Milliken designs require specific installation methods (Quarter-turn, Ashlar, etc.) to achieve the intended appearance.

PRIOR TO INSTALLATION, always consult your local Milliken sales representative or Milliken Technical Services (1-800-528-8453 Option 3) if you have questions or concerns about the correct installation method. Due to the nature and construction of solution-dyed nylon, we can provide unique, tufted design patterns. From time to time during installation, these products may require that tiles be shifted within the layout to avoid a dark line in one tile being positioned next to a dark line in another tile. The dark seam is not a carpet manufacturing defect and can be avoided by attention during the installation phase. Random patterns may require additional shuffling during installation to eliminate repeating pattern tiles.

HIGHLIGHTS FOR THE INSTALLATION OF MODULAR LANDSCAPES

1. **All subfloor preparation must be done to LVT standards, regardless of composition.** The subfloors must be smooth and flat to within 1/8" (3.75mm) in 10 feet or achieve an "F50" rating by use of mechanical grinding/sanding and/or suitable non-shrinking, water resistant Portland cement-based patching and leveling compounds.
2. To prevent problems and general movement of Modular Landscapes products, areas to receive flooring shall be permanently dry, clean, smooth, level and structurally sound. They shall be free of all contaminants, including but not limited to: dust, solvents, paint, wax, oil, grease, residual adhesive, adhesive removers, curing, sealing, hardening or parting compounds, alkaline salts, excessive carbonation or laitance, mold, mildew; any foreign material that might prevent a proper adhesive bond. **Milliken requires full-spread coverage of adhesive in all areas of installation for Modular Landscapes products.**
3. Adhesive used with this product must be approved by Milliken. **For this limited Hospitality Room application, Milliken Mosaic 98 Spray adhesive can be used to install both** the WellBAC Cushionback modular carpet and Flexform Sound with a single spray application of adhesive. Detailed installation directions follow.
4. **Required adhesive coverage rates: 150 ft²/22 oz. can for Milliken Mosaic 98 Spray.**

5. All adhesive installed carpet and LVT planks or tiles must be rolled with a 3 section 100-pound roller.
6. Doorways and archways must have a suitable "T" molding installed to protect the exposed edges of the flooring, and cover ¼ inch installation gap. Use a full-spread coverage of adhesive to keep flooring from movement.
7. FOR LVT, expansion gaps of ¼ inch are required at every vertical surface (walls, built-in furniture, columns, etc.). This is not required for carpet. If questions, please contact Milliken Technical Services, 1-800-528-8453 Option 3.
8. A recommended vendor for color-matched caulk for sealing expansion gaps, bathroom perimeters, tub/shower, toilet gaps, etc. is Color-Rite Inc.: <https://colorriteinc.com/color-rite/>. Phone: 855-822-2855.
9. Product not suitable for installation over Radiant Heated floors. Please contact Milliken Technical support for potential alternative product solutions.
10. Some Milliken carpet tile and LVT designs require specific installation methods (Quarter-turn, Ashlar, etc.) to achieve the intended appearance. PRIOR TO INSTALLATION, always consult your local Milliken sales representative or Milliken Technical Services (1-800-528-8453 Option 3) if you have questions.

RECOMMENDED ADHESIVE (Single adhesive application option)

- **Single adhesive for Modular Landscapes (WELLBAC modular carpet and FlexForm Sound LVT)**
- **Milliken Mosaic 98 - Spray adhesive**, packaged in 22oz aerosol cans is recommended for the installation of Modular Landscapes when:
 - **New Pour - pH and RH testing required**
 - It is a new pour > 45 days
 - Slab is on-grade or above-grade
 - RH does not exceed 98%
 - pH does not exceed 11
 - Moisture vapor Emissions (MVER) does not exceed 8 lbs. per 1000 square feet per 24 hours when tested with a prepackaged Calcium Chloride crystal tests in accordance with the most current ASTM F1869 standard.
 - No Visible water on the surface
 - ASTM E-1745 Class B minimum conforming Vapor Retarder is in place in accordance with ACI 302-2001 and directly in contact with the concrete placement.
 - Acclimatized to service conditions.
 - Bond test required with archived photo documentation.
 - **Renovation - On Grade: pH and RH testing required.**
 - RH does not exceed 98%
 - pH does not exceed 11
 - Moisture vapor Emissions (MVER) does not exceed 8 lbs. per 1000 square feet per 24 hours when tested with a prepackaged Calcium Chloride crystal tests in accordance with the most current ASTM F1869 standard.
 - There is no visible moisture on the surface.
 - Existing adhesive must be removed to a stain.
 - Acclimatized to service conditions.
 - Bond test is required for WellBAC carpet with archived photo documentation.
- **Required Coverage Rates:**
 - Mosaic 98 Spray Adhesive - 150 sq. ft. per 22 oz. can
 - Shake can well before each use. Point can downward, press the side of the nozzle tip as you slowly walk back and forth to achieve full coverage. Do not use a sweeping motion as this may create an uneven spray pattern. Please see the Milliken Mosaic 98 Spray Adhesive can label for application rate illustration.
 - Spray adhesive will provide approximately 4 hours of open time. Ensure adhesive is not contaminated by dust while open/exposed.
- **Bond Test Procedure for Releasable Installation of Carpet Tile:**

- Select an approximately 7-foot square area (4 square meters) in a typical location on the substrate or slab. The floor should be prepared as described in following SUB-FLOOR SUBSTRATE PREPARATION section.
- The adhesive should be applied at a rate of 150ft² per 22 oz can and be allowed to dry completely prior to installation of modular carpet. NEVER INSTALL ANY MILLIKEN MODULAR CARPET INTO WET ADHESIVE.
- Observe the adhesive drying time, which will vary with the floor porosity and ambient conditions. Properly dried adhesive will not transfer to the finger and will have a tacky feel.
- After placing the carpet tile on the dried adhesive, apply downward pressure to assure contact with the substrate. Tiles should be immediately locked in place inhibiting lateral movement.
- After 24 hours, observe the mock-up installation to see if any obvious problems may exist. The modular carpet should be adequately bonded to the substrate and inhibit lateral movement with adhesive remaining firmly bonded to the substrate. To test this attempt to slide each tile. Now lift each carpet tile and check backing for adhesive transfer. All adhesive should remain on the floor. There should be no adhesive transfer to the back of the carpet tile.

APPROVED SUB-FLOOR SUBSTRATES

The following are approved substrates for installation of Milliken Modular Landscapes products. See the next section for proper testing and substrate preparation prior to installing your Milliken floorcovering.

All substrates regardless of composition must be smooth and flat to within 1/8" (3.75mm) in 10 feet or achieve an "F50" rating by use of mechanical grinding/sanding or suitable Portland cement-based patching and leveling compounds.

- Above-grade or on-grade concrete without hydrostatic pressure, excess moisture, or alkalinity. Must be fully cured and dry, free from curing compounds, sealers etc.
- Above-grade or on-grade lightweight concrete, properly prepared and without hydrostatic pressure, excess moisture, or alkalinity
- Above-grade or on-grade Gypsum concrete surfaces, properly prepared, sealed and without hydrostatic pressure, excess moisture, or alkalinity

The following substrates are not approved for the single adhesive, Mosaic 98 Spray system, but instead should use separate adhesives for the Flexform Sound and Modular carpet as described in the installation instructions at following website: https://floors.milliken.com/floors/en-us/technical/technical-documentation#MainContainer_C169_Col00

- Below-grade concrete without hydrostatic pressure, excess moisture, or alkalinity. Must be fully cured and dry, free from curing compounds, sealers etc.
- APA registered underlayment, sanded face exterior grade (not pressure treated) with minimum rating of B-C plugged face
- APA registered exterior grade plywood sanded and plugged face (not pressure treated) with ratings as follows: B-C, or better
- Properly prepared and well bonded existing resilient floor covering
- Cement Terrazzo, ceramic tile, marble – see adhesive for proper preparation.
- Certain metal floors – see adhesive for proper types and preparation. May require use of a 2-part epoxy; contact Milliken Technical Support for assistance
- Raised Access flooring

The following are not approved substrates for installing Milliken FlexForm Sound 5.0mm Luxury Vinyl Tile:

- Epoxy terrazzo
- Rubber, cork, or asphalt tiles
- Textured or cushion backed resilient flooring
- "Sleeper" floor systems and other uneven or unstable substrates
- Plywood floors that have been installed directly over a concrete slab
- Luan, OSB, particle or chip boards, CCA (pressure treated), oil treated or other coated plywood
- Advantech OSB as LVT is to be glued down (OSB must be covered with appropriate plywood).
- CDX or other plywood with knots or open defects
- Underlayment made of pine, cork, or other soft woods
- No underlayments at the surface of the structural subfloor are allowed, including rubber, polyurethane, cork and plastic foam.

- Masonite™ or other hardboard underlayment
- Hardwood flooring
- Radiant heated floors
- Uneven or unstable substrates
- Paint, wax, oil, grease, residual adhesive, mold, mildew, and other foreign materials that might prevent adhesive bond

SUB-FLOOR SUBSTRATE PREPARATION

All substrates must be properly prepared and tested according to the following guidelines.

1. Concrete Subfloors

- Shall be in accordance with the most current version of ASTM F710 – Standard Practice for Preparing Concrete to receive Resilient Flooring.
- All patching and leveling is to be in accordance with the most current version of ASTM F2678 – Standard Practice for Preparing Underlayment's, Thick Poured Gypsum Concrete Underlayment's, Thick Poured Lightweight Cellular Concrete Underlayment's and Concrete Subfloors with Underlayment Patching Compounds to receive Resilient Flooring.
- Concrete slab construction shall be in accordance with industry standards for specification related to concrete mix design, curing methods and drying times to prevent moisture problems.
- On-grade slabs should be installed with a suitable vapor retarder directly underneath the concrete slab.**
- New concrete shall be properly cured and dried prior to the installation of floor covering. Curing agents, surface hardeners and other membranes or compounds shall be mechanically removed immediately after initial cure to allow the slab to properly dry before installation. Approximately 30 days per 1" of slab thickness.
- All concrete substrates, regardless of grade or age of slab, must be properly tested using one of the methods outlined below for warranty to apply. Acceptable test method is the ASTM F 2170 In Situ Relative Humidity. Testing shall be conducted according to the instructions of the manufacturer of the testing equipment.

ASTM F 2170 In-Situ Relative Humidity Test

- Prior to conducting ASTM F 2170 in-situ testing, a preliminary evaluation of comparative moisture conditions of concrete, gypsum cement, and other flooring should be conducted using a non-destructive Electronic Moisture Meter. This will assist in determining areas that must then be tested per ASTM F 2170.
- Testing should only be done when the test site is at the same temperature and humidity expected during normal use; or at a temperature of 65° - 80°F (18° - 26° C) and 45% - 50% humidity for minimum 48 hours prior to testing.
- A minimum of 3 test holes for the first 1,000ft² (100 M2) and one additional test hole for each 1,000ft² (100 M2) thereafter.
- Test holes are to be drilled at a depth of 40% of slab thickness (one-side drying) or 20% of slab thickness (two sides drying).
- Test holes should be allowed to acclimate for 72 hours prior to insertion of the test probe. Reusable probes should equilibrate at least 1 hour prior to use in the next test area.

Concrete Alkalinity / pH Test

- Testing should only be done when the test site is at the same temperature and humidity expected during normal use; or at a temperature of 65° - 80°F (18° - 26° C) and 45% - 50% humidity for minimum 48 hours prior to testing.
- Using distilled water, place drops of water to form a small puddle approximately 1" in diameter.
- Wait 60 seconds, then dip a portion of the pH paper into the water.

Moisture Vapor Emissions (MVER)

- Moisture vapor Emissions (MVER) does not exceed 8 lbs. per 1000 square feet per 24 hours when tested with a prepackaged Calcium Chloride crystal tests in accordance with the most current ASTM F1869 standard.

Concrete Slab Preparation

- Concrete slabs shall be clean and smooth prior to installing floor coverings. Remove all sealers, curing agents and compounds, grease, oil, adhesive removers, old adhesive residue, dirt, paint, etc. to ensure a clean bond surface for the adhesives.

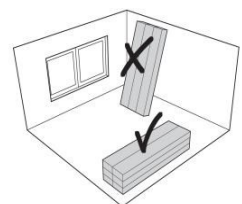
- ii Concrete floors shall be smooth and level to prevent irregularities, roughness, or other defects from telegraphing through the new resilient flooring. The surface of the slab shall be flat to within $\leq 1/8$ " over 6-foot and $\leq 3/32$ " over 1-foot in all directions.
- iii Uneven areas should be mechanically ground to smoothness.
- iv Cracks, depressions, or other similar irregularities should be leveled using a suitable high moisture resistant Portland cement-based patching compound. Follow the patch manufacturer's instructions regarding mixing and applications.
- v Overly porous, dusty, flaky, or soft concrete surfaces are not suitable for resilient floor coverings. It may be necessary to mechanically remove the top layer concrete in such cases and/or these surfaces may need to be primed and covered with a high moisture resistant cement-based underlayment compound. Follow the patching or leveling compound manufacturer's instructions regarding preparation of the concrete surface, priming, mixing of the product, thickness of application and drying time for resilient floor covering installation.
- vi Expansion joints, isolation joints, control joints or other moving joints in the concrete slab shall not be filled with patching compound or covered with resilient flooring.

2. Wood Subfloors

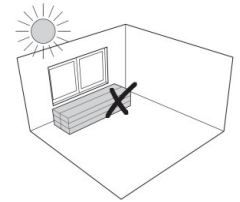
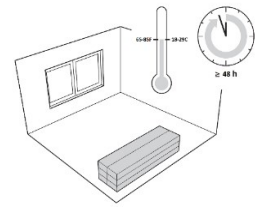
- a. A combination of wood subfloor and panel underlayment construction shall be a minimum of 1" in total thickness.
- b. There shall be at least 18" of well-ventilated air space beneath all wood subfloors. Crawl spaces shall be insulated and protected by a suitable vapor barrier.
- c. Wood subfloors installed directly on concrete or over "sleeper" joist systems are not acceptable for use under Milliken FlexForm Sound 5.0mm LVT.
- d. Panels designed as suitable underlayment shall be at a minimum:
 - i. Minimum $1/4$ " in thickness
 - ii. Dimensionally stable
 - iii. Fully sanded face to eliminate grain texture or show through.
 - iv. Have a written manufacturer's warranty and installation instructions
 - v. Be free of substances such as ink, fillers and resins which may lead to staining of the resilient flooring
 - vi. Have all knots, voids and defects properly plugged and sanded
- e. Panels shall be installed according to manufacturer's instructions regarding stapling pattern, sanding and filling of joints, and acclimation to installed environment.
- f. Milliken will not cover or accept responsibility for the following:
 - i. Joint telegraphing, either as a "ridge" or "valley"
 - ii. Grain or texture telegraphing
 - iii. Discoloration of finished flooring due to materials used for filling of voids and defects in the face of the underlayment
 - iv. Use of Luan Plywood underlayment
- g. Unacceptable substrates shall be covered using a $1/4$ " or thicker panel underlayment recommended for commercial use. Consult underlayment manufacturer for:
 - i. Recommended uses of product
 - ii. Warranty coverage
 - iii. Joint spacing
 - iv. Nailing or stapling pattern
 - v. Seam treatment
- h. Suitable underlayment panels include Artic (Baltic) Birch, A/C grade plywood with sanded face, or other underlayment grade exterior plywood.

Product Handling and Site Conditions

1. **Never** install Modular Landscapes outdoors.
2. Check batch and product details and quantity are correct and match purchase order.
3. Inspect your shipment of Modular Landscapes to ensure that all cartons are of the same lot/manufacturing run.



4. Store cartons of tile and/or plank with cartons stacked one on top of the other. Do not store on end or sides or allow cartons to bend during storage or transportation.
5. Acclimate product to job site conditions by delivering all materials, including adhesives and maintenance products, to the job site at least 48 hours prior to installation. Store all products at 65° to 85° Fahrenheit (18° to 29° Celsius) for 48 hours prior to installation. Unpalletized boxes laid on flat surface will acclimate more evenly. Floorcoverings left stacked may take longer to acclimate.
6. The space where flooring is to be installed shall be fully enclosed and the permanent HVAC system shall be operational prior to installing flooring. The temperature shall be 65° to 85° Fahrenheit (18° to 29° Celsius) for 48 hours before installation, during installation and for 48 hours after installation. The temperature of the space shall be kept at a minimum of 50° Fahrenheit (10° Celsius) continually after installation.
7. FlexForm vinyl floors should be protected from direct sunlight and not exposed to intense direct sunlight for extended periods of time. Milliken recommends suitable UV window coverings be in use in areas of large amounts of direct sunlight exposure. Unprotected window exposure can allow heat generation / thermal expansion which can create buckling problems.
8. To prevent damage to the newly installed flooring, the installation of flooring products should be installed after all other trades have completed their work. To further prevent damage after install until space is occupied, use of a reinforced fiber-based temporary floor protector product is strongly recommended.
9. During installation, mix and install planks from several different cartons to minimize shade variation.
10. To minimize shade variation during installation of Modular Landscapes, mix and install planks from several different cartons.
11. Install flooring perpendicular to direct light sources, including large windows, etc. Use of suitable window coverings during the times of most direct sunlight is recommended.



INSTALLATION INSTRUCTIONS:

GENERAL: The most important part of any modular installation occurs before the first module or plank goes on the floor and any adhesive is applied. Proper planning and layout are crucial to the success of all modular installation. For detailed planning and layout instructions, see WellBAC instructions that includes Triangle Method, Double Arc Method, and Pyramid Method:

https://floors.milliken.com/floors/en-us/technical/technical-documentation#MainContainer_C169_Col00

Layout:

- a. Determine the center of the room and dry lay a section of tile/plank from the center line to one wall to determine that the pattern is centered and fit. Measure the border cuts along the wall and compare to the following criteria. If necessary, adjust the first row at the centerline to meet either the plank or tile
- b. Planks should never be less than 9 inches long or less than half of the width of the plank. Avoid small pieces in border areas and adjust the center lines to achieve the proper pattern.
- c. Tiles should not be less than 6" in length or width. Avoid small pieces in border areas and adjust the center to achieve the proper pattern
- d. Tiles are designed to be laid in any fashion with the most popular being point-to-point and ashlar patterns. All tile sizes and patterns look best when the layout is balanced in the installed room.

Installation of flooring:

- a. Before spreading adhesive, strike a parallel chalk line to the centerline of the length of the room approximately 2' to 3' from the wall. Actual position is to be determined by the layout of the planks, ensure that the pattern is followed from your initial starting point determined in the dry layout performed earlier. If necessary, re-lay part of the pattern from centerline starting point to determine the exact measurement of the parallel line.
- b. After determining the starting point, apply adhesive, keeping in mind the open time for the adhesive. Spread adhesives using the proper spray pattern.
- c. Allow to dry and tack up.

- d. Begin installing the first row of flooring into the adhesive, keeping an 1/4" gap along all vertical surfaces for LVT; not required for carpet. Modular Landscapes tile/planks (both LVT and carpet) must be installed 'tightly' to themselves. Once your starter rows are secure and the flooring planks/tiles are tightly butted together, continue installing the next rows tightly butting all joints together.
- e. Continue in this manner, applying only enough adhesive that can be installed within the working time of the adhesive.
- f. For the LVT sections, periodically lift flooring material to verify proper transfer of the adhesive to the tile to ensure good bonding.
- g. During installation, roll all the areas of the floor with a 3-section 100 lb. roller to ensure proper transference of adhesive to the plank backing. This is critical to assure good adhesive bond.
- h. Summary: (https://floors.milliken.com/docs/default-source/americas-documents/technical-documents/site-related-solutions/spec-sheets/lvt---standard-adhesive.pdf?sfvrsn=39899f9a_4):

PRODUCT CHARACTERISTICS OF MOSAIC 98 SPRAY ADHESIVE		
Appearance	Milky white frost bubbles	
Application	Spray	
Freeze/Thaw	Stable to 10°F (-12°C)	
Shelf Life	3 year (unopened)	
PREPARATION		
Testing	RH: <98% required; pH: up to 11	
Vapor Barrier Requirement	ASTM E-1745 Class B minimum vapor barrier in place in accordance with ACI 302-2001 and directly in contact with the concrete placement	
Surface preparation	Any existing old adhesive must be removed to a stain	
Environment	Acclimatized to service conditions	
TIME		
Dry Time	10-20 min until dry and tacky to touch	
Working Time	2 hours after tack	
TRAFFIC		
Light Traffic	Immediately	

Proper Installation of Bathrooms

1. Remove toilet; prepare sub-floor as described above.
2. Apply adhesive as above.
3. Apply LVT.
4. Re-install toilet.
5. Use flexible caulk in bathrooms around toilet, tub/shower, and wall base of room; a recommended vendor for color-matched caulk for sealing expansion gaps, bathroom perimeters, tub/shower, toilet gaps, etc. is Color-Rite Inc.: <https://colorriteinc.com/color-rite/>.

After Installation

1. Be sure planks are set, flat, and have tight edges. Re-roll the entire installation, along the length and width of the tiles/planks with a 3-section 100 lb. roller to ensure all tiles are properly set into the adhesive. If necessary, weigh down any loose planks overnight to ensure bond.
2. Clean any adhesive residue from the face of the LVT flooring following these directions:
 - a. Wet adhesive residue on the surface of the LVT planks can be cleaned with a clean, white cloth dampened with warm, soapy water. Do not use excess water as this can seep between the seams of planks and lead to an adhesion failure!
 - b. Dry adhesive residue can be cleaned with mineral spirits or denatured alcohol and a clean cloth in a sparingly manner. Carefully follow the directions on the mineral spirits container. Please note that improper use of any chemical can harm the finish of the LVT.
 - c. Do not pour soapy water, mineral spirits, or denatured alcohol directly on the LVT.
 - d. Proper rolling of floors during and after installation is a must on Luxury Vinyl products. Use a 3-section, 100-pound roller to set flooring into the adhesives.
3. Use flexible caulk for any expansion gaps used for floor-to-floor window walls or thresholds without any wall base to protect from expansion/contraction potential. A recommended vendor for color-matched caulk for sealing expansion gaps, bathroom perimeters, tub/shower, toilet gaps, etc. is Color-Rite Inc.: <https://colorriteinc.com/color-rite/>.
4. The temperature of the space shall be kept at a minimum of 50° Fahrenheit continually after installation.

5. Milliken Modular Landscapes flooring should be protected from direct sunlight and not exposed to intense direct sunlight for extended periods of time. Milliken recommends suitable UV window coverings be in use in areas of large amounts of direct sunlight exposure. Unprotected window exposure can allow heat generation / thermal expansion which can create buckling problems.
6. If Milliken Modular Landscapes is not the last portion of the construction project, the floor must be protected from construction traffic and damage. Wait 24 hours and utilize a reinforced fiber protective board or a heavy Kraft paper (min. 60 lbs.) and cover the floor. Failure to wait 24 hours before covering can impact adhesive curing. Milliken recognizes the CRI Carpet Installation 104 Standard for Installation of Commercial Carpet, September 2015 as the standard guideline for protecting carpet and associated materials after installation. The CRI Standard specifically states: "It is recommended that carpet be the last trade on any job site. However, if it is required to protect the finished floor covering from soil or paint, or if any additional work is required to be done after installation, the carpet should be covered with a non-staining building material paper. Protect the installation from rolling traffic by using sheets of hardboard or plywood in potentially affected areas." Also, CRI cautions: "Self-adhering plastic films may leave residues that result in rapid soiling after removal. Do not place plastic sheeting over any carpet installation because it may present a slip hazard. Most importantly, plastic coverings will trap moisture, retard adhesive curing and may promote mold growth."

This information is supplied by Milliken & Company
300 Lukken Industrial Drive West, LaGrange, Georgia 30240
Call Technical Services Team Toll Free 1-800-528-8453 – Select Option #2

The above instructions represent the best available data and are deemed to be correct and complete; however, Milliken assumes no liability for installation-related problems.

11/2021