Mohawk Group Glue Down
Luxury Vinyl Tile Installation Instructions

Mohawk Premium Commercial Luxury Vinyl Tile is recommended for a variety of commercial applications, including educational, institutional, healthcare, retail, office and hospitality environments. Mohawk's Commercial LVT can be installed over most properly prepared substrates, making it suitable for installation on all grade levels where moisture conditions do not exist. We continuously make technological advancements that improve product performance or installation techniques and methods. To confirm you have the most recent installation instructions, please visit our website www.mohawkflooring.com or contact Technical Services at 888-387-9881, Option 3.

Asbestos Warning

WARNING! DO NOT MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC "CUTBACK" ADHESIVES OR OTHER ADHESIVES.

Previously installed resilient floor covering products and the asphaltic or cutback adhesives used to install them may contain either asbestos fibers and/or crystalline silica. Avoid creating dust. Inhalation of asbestos or crystalline dust is a cancer and respiratory tract hazard. Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm. Unless positively certain that the previously installed 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 and may govern the removal and disposal of material. See current edition of the Resilient Floor Covering Institute (RFCI) publication "Recommended Work Practices for Removal of Resilient Floor Coverings" for detailed information and instructions on removing all resilient covering structures.

Job Site Conditions

It is the responsibility of the Installer and Owner to ensure that job site environmental, substrate and subsurface conditions involved meet or exceeds all requirements as outlined in installation instructions prior to installation. Manufacturer declines all responsibility for product performance or installation failure due to structural, substrate or environmental deficiencies or jobsite conditions.

- Resilient flooring installation should be scheduled after all other trades have completed their work.
- The HVAC systems must be in operation for at least 10 days prior to flooring installation and thereafter to maintain a constant temperature. Portable heaters may not provide adequate heat. Never use kerosene heaters.
- Proper acclimation of the room, substrate, flooring material, adhesive and all installation accessory products is critical to the success of the adhesive and flooring performance. Installation over cold substrates will delay adhesive flash time and dry time, affect the size of the floor and increase the potential for indentation and or adhesive displacement. The substrate temperature must be between 65F and 85°F (18°C and 29°C) at the time of installation.

- Un-opened cartons of flooring should be neatly stacked in the room where they will be installed during the acclimation period. Open cartons just prior to installation.
- When using flooring from two or more cartons, make sure pattern and run (lot) numbers found on the carton are the same. This information is on the outside label of each carton. It's recommended to blend products from multiple cartons during installation.
- Excess flooring should be stored in a protected climate controlled environment on a flat surface for future repairs if necessary.

General Information

It is important that flooring products maintain proper temperature before, during, and after installation in order to minimize dimensional changes. The substrate, all flooring material, and the adhesive must be conditioned on a flat surface at a constant temperature between 65˚F (18˚C) and 85˚F (29˚C) for 48 hours prior to, during, and 48 hours after installation. Thereafter, maintain a room temperature between 55˚F (13˚C) and 90˚F (32˚C).

Tools and materials

- Mohawk's M700 Commercial LVT Adhesive, M950 Adhesive or MS160 Spray Adhesive
- Trowel Sizes: 1/16" x 1/32" x 1/32" U-Notch for M700 (220–260 sq. ft./gallon) and M950 (spread rate: 175 - 225 sq. ft./gallon). Trowel not required with MS160 (spread rate: 145-160 sq. ft/can).

  NOTE: This adhesive spread rate is appropriate over most smooth substrates to achieve adequate transfer; however, a larger trowel (up to 1/16" square notch) could be required over rough or porous substrates.
- Mohawk HydroSeal 95 Moisture Inhibitor
- Mohawk SurfaceSeal Adhesive Encapsulator
- Mohawk PrimeCoat Primer
- 75 pound, 3 section roller
- Chalk Line
- Carpenter square
- Utility Knife
- Cutting board
- Tape measure

- In Situ RH Moisture Meter or Calcium Chloride Test Kit
- pH strips
- Distilled Water (do not substitute)

Suitable Substrates and Surface Materials

- Fully cured, dry concrete on all grade levels (Moisture vapor emissions should not exceed 5 pounds (ASTM F1869) or 85% RH (M700), 90% RH (M950) or 93% RH (MS160) with a pH range between 8 and 9.
- Approved suspended wood floors and underlayment.
- Portland cement-based self-levelling underlayment and patching compounds.
- Prepared ceramic tile, marble and cement terrazzo.
- Aluminum, steel and stainless steel.
- Embedded radiant-heated substrates where the maximum surface temperature of the floor does not exceed 85F (29°C) in any area.
- Existing inlaid resilient sheet flooring-single layer, fully adhered and well bonded.
- Existing vinyl composition tile (VCT) - single layer, well bonded over on or above grade level only.

Note: Some previously manufactured vinyl floor covering and asphalt "cutback" adhesive contain asbestos. For preparation or removal of these products, refer to the Resilient Floor Covering Institutes publication "Recommended Work Practices for the Removal of Resilient Floor Covering". These work practices must be followed.

For a copy of the recommended work practices, please contact:

Resilient Floor Covering Institute (RFCI)
401 East Jefferson Street
Suite 102
Rockville MD 20850

Site preparations
The substrate must be sound, smooth, dry and clean. Mechanically remove any dirt, wax, loose paint, existing adhesives and all foreign matter that would interfere with a good bond. Do not install LVT directly over cutback residue. If you encounter cutback residue, mechanically remove and apply a coat of **Mohawk SurfaceSeal** prior to installation of flooring. If installation is over gypcrete it is advisable to apply a coat of **Mohawk PrimeCoat** and allow to dry prior to installation of flooring.

Seal porous or dusty concrete surfaces with **Mohawk PrimeCoat** or **Mohawk HydroSeal 95**. Do not use on chemically cleaned substrates or over treated plywood substrates. The installation site must be acclimated with HVAC in operation. The floor and room temperature, as well as flooring material and adhesive, must be maintained at 65°–85° F, and the humidity below 65% for 48 hours prior to, during, and after pre-installation testing and installation. Use M700 PSA for installations over concrete substrates with moisture emission of 5 lbs. per 1000 square feet in 24 hrs. when tested in accordance with the latest version of ASTM F 1869 **and** 85-93% RH (according to adhesive used), when tested with the latest version of ASTM F 2170. If RH exceeds limit specified by each adhesive, use **Mohawk HydroSeal 95** to lower readings. pH should always be between 8-9. Lower pH readings on a concrete substrate may indicate that a sealer or sealed surface is present. Conduct adhesive bond testing on concrete substrates with pH below 8. All substrate preparation and testing procedures must conform to appropriate ASTM F710.

Over Ceramic
Remove any loose tiles and fill with appropriate Portland cement floor fill. Roughen surface of tile. Fill grout joints to the level of the surface of the ceramic tile with appropriate Portland Cement floor fill carefully following the floor fill manufacturer's instructions for mixing, priming and spreading material over ceramic tile.

Painted concrete
Because it's difficult to determine the type of paint might be on a substrate surface to receive floor covering, it is necessary to mechanically remove all paint and/or paint residue from the substrate prior to spreading adhesive and installing floor covering.

INSTALLATIONS

Follow the installation instructions and guidelines regarding adhesive application rate and method.

Luxury Vinyl Plank and Luxury Vinyl Tile

Porous substrates
When installing LVT and LVP over a porous substrate, the adhesive should be allowed to dry to the touch sufficient to prevent slippage. Loss of adhesion can result if the flooring is not installed within the working time of the adhesive. Roll the installation in both directions with a 75 lb. 3-section roller immediately after the flooring is placed, insuring complete contact with the adhesive.

Non-porous substrates
Install LVT and LVP into adhesive as it becomes dry to the touch with little or no transfer to finger when touched. This will normally require 30–60 minutes of drying time at suggested installation temperature and humidity. Do not install flooring into wet adhesive on non-porous substrates. Roll the installation in both directions with a 75 lb. 3-section roller immediately after flooring is placed, ensuring complete contact with adhesive.

TRAFFIC

Follow Mohawk's installation guidelines; restrict foot traffic for 24 hours after installation unless using MS160 Adhesive which can be walked on within one hour after installation. Restrict heavy traffic, rolling loads, or furniture placement for 72 hours after installation with M700 and M950; restrict this type of traffic for 24 hours with MS160. Additional time may be necessary if the installation is over a non-porous substrate. Allow at least five days following the installation before conducting wet cleaning procedures or initial maintenance.

CLEAN UP

Use a clean wet cloth to clean up adhesive while still wet; dried adhesive may require the use of an appropriate solvent.

SHELF LIFE

All Mohawk adhesives and installation sundries have a 1 year shelf life from manufacturing date in an un-opened container. These products are considered non-hazardous VOC compliant with CA SCAQMD Rule 1168. In case of eye contact, flush with water for 10-15 minutes. If irritation persists contact a physician. Prolonged skin contact may cause slight irritation, wash with soap and water. If swallowed, consult a physician. Avoid excessive heat or cold. Protect from freezing – especially MS160 which is more sensitive to extreme temperatures. Store indoors at a temperature of 60°-100°F. Safety glasses and gloves are recommended. DOT Hazard Class: Unregulated.

SUBSTRATE PREPARATION:

All substrate surfaces must be flat, clean, dry, smooth, and free of movement. Certain requirements may apply in order to prepare these substrates for resilient flooring. All surface imperfections should be filled and sanded with a Portland cement-based latex patching compound. Substrates covered with existing flooring may also be acceptable for residential and light commercial applications.

Ensure that concrete substrates are sufficiently dry by conducting moisture and pH tests. The substrate, regardless of the type must be flat, smooth, clean, dry, structurally sound and free of paint, old adhesive residue, wax, grease, oil, solvent, curing and parting compounds and other substances that could interfere with adhesion or the performance of the flooring. ***Never use liquid adhesive remover or solvent cleaners for removing old adhesive residue or other substances on the substrate.*** These substances must be mechanically removed. Conduct bond tests to confirm suitable adhesion to the substrate.

Flat *– Within 3/16" in 10' radius and/or 1/8" in 6' radius - sand high areas or joints - fill low areas with a high compressive strength Portland base compound. Subfloor deflection should not exceed 1/360th of the span. The flatness of the substrate is particularly important for keeping joints tight and in alignment when installing large format tiles. Deviations in the substrate should not exceed 3/16" in 10' or 1/16" in 1'.*

Dry *– Select the appropriate moisture indicator test specifically designed for use with wood or concrete subfloors. Test and record moisture content results.* ***DO NOT INSTALL FLOORING IF MOISTURE TEST RESULTS EXCEED RECOMMENDED LIMITS.***

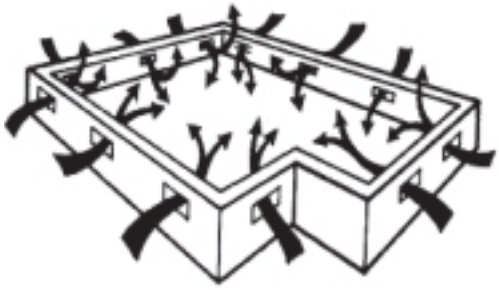
Concrete Substrates

1. Concrete substrates must be dry, smooth, and free from oil, dust, solvent, paint, wax, grease, and asphalt sealing compounds or other materials. The surface must be hard and dense, and free from powder or flaking.
2. New concrete slabs must be thoroughly dry (at least six weeks) and completely cured. 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. Moisture emissions from subfloor cannot exceed 5 lbs. per 1,000 sq. ft. per 24 hours as measured with the calcium chloride test or in excess of the particular In Situ Relative Humidity level specified for each adhesive type. Responsibility for determining if the concrete is dry enough for installation of the flooring lies with the owner and installer.
4. Surface alkalinity of concrete substrate – Concrete slabs should be tested for the presence of alkali salt build up. Excessive alkali can cause adhesive and vinyl failure. A simple pH paper test using distilled water and pH paper can determine the presence of excessive alkali salt. Pour a small amount of distilled water on to the slab and allow it to stand for a minimum of one minute. Place the pH paper strip into the distilled water. The acceptable range should be from 8-9 pH. Corrective measures must be taken if the pH exceeds these guidelines by applying a coat of Mohawk PrimeCoat.

Wood Substrates

NOTE: As with many other interior finish products, modification of existing structural components may be required for a successful installation.

1. Nail or screw any areas that are loose or squeak. Wood panels should exhibit an adequate fastening pattern, glued/screwed or nailed as that system requires, using an acceptable nail pattern. Typical is 6" along bearing edges and 12" along intermediate supports. Flatten edge swell as necessary. Replace any water-damaged, swollen or delaminated subflooring or underlayment.
2. Wood underlayment panels should be a minimum of 1" or thicker and free of vertical deflection. All fasteners must be flush with the underlayment panels.
3. Basements and crawl spaces must be dry. Use of a 6 mil black polyethylene membrane is required to cover 100% of the crawl space earth. Crawl space clearance from ground to underside of joist should be no less than 18" and perimeter vent spacing should be equal to 1.5% of the total square footage of the crawl space area to provide cross ventilation.

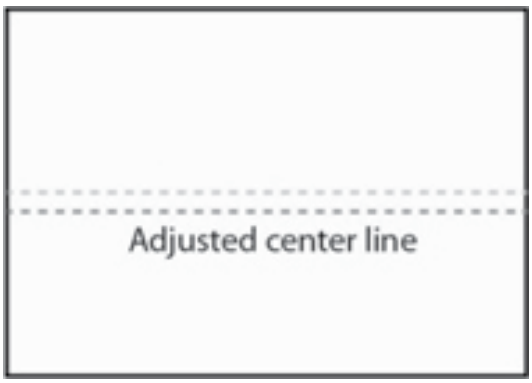


Floor Layout

First determine the direction to install the planks. As a general rule, planks are normally installed running in the long direction of the main room. Rectangular tiles may be installed in ashlar or herringbone configurations. When directional marks are printed on the back of a tile, that indicates all tiles should run in the same direction.

Place a mark in the center of the floor at each end of the room. Snap a chalk line between the marks.

Original Center Line



Center line after adjustment

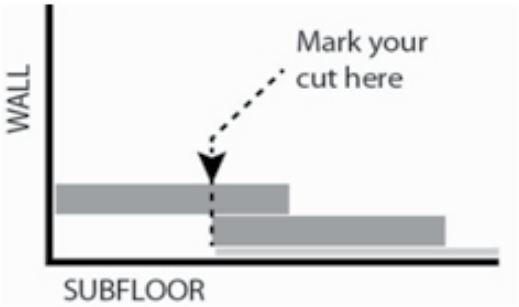
To avoid small narrow planks along the walls, divide the distance from the center line to the wall by the plank or tile width (6", 7.25", 18", or 19.7"). If the remainder is less than 3 inches, adjust the center line one half width of a plank in either direction. This will provide a balanced layout with larger cut pieces at the wall.

Finished Flooring Installation

Using the recommended notched trowel spread the adhesive over one half of the floor up to your use line. Do not apply excessive adhesive. Follow instructions above regarding dry time for porous or non-porous substrates before installing the plank or tile. Start installing the plank along the center line. Complete each row, including cut pieces at the wall, before proceeding to the next row. Offset end joints by at least 6 inches and position product in a random fashion for the best appearance.

Position the product lightly against the previous one, by pressing it firmly into place without sliding it. Remember to avoid small cuts of less than 6 inches at the ends of each row and place cut ends towards the wall. If it is necessary to adjust or remove a plank, use a heat gun to warm the plank first. Complete the opposite side of the room in the same fashion as the previous side.

Cutting a plank or tile to fit
The last row of product will need to be cut to fit to walls and other vertical surfaces.
Straight Cuts: place a loose plank or tile directly over the top of the last full installed plank or tile, making sure to line up all edges. Using a plank to measure the distance from the wall to the last installed plank or tile, position the edge against the wall and mark the loose piece with a pencil where it meets the installed piece at the opposite edge from the wall.



Next, place the marked piece on a cutting board. Using a carpenter square as a guide, score the pencil line carefully with a sharp knife, then break/snap (or cut) the plank or tile along the score mark.

CAUTION: Keep fingers away from the knife blade to avoid injury. Install plank with the cut edge toward the wall.

Irregular cuts: Scribe plank to fit irregular shapes such as door trims, pipes, etc, and cut with a utility knife.

Immediately after Installation
Roll the entire floor with a 75 pound 3 section roller. Restrict to light traffic for the first 24 hours. Replace the base moldings and return appliances and furniture to the room by rolling or sliding them over strips of hardboard. Seal all areas that may be exposed to surface spills (i.e. tubs, toilets, and showers) with silicone caulking.

Tips & Warnings:

- Sweep regularly with a soft bristle broom or dry electrostatic cloth.
- Use felt protectors or 1" hard plastic castors under heavy pieces of furniture, fixtures and chairs.
- Use protective mats at all exterior entrances. Do not use mats or area rug cushions constructed of rubber or PVC. Instead use urethane backed products.
- Spiked heels or shoes in need of repair can severely damage the floor.
- Use protective matting under rolling chair castors.
- The sun's UV rays can change the color of the floor.
- Protect your floor when using a dolly for moving furniture or appliances or heavy fixtures. Never slide or roll heavy objects across the floor.

*Exterior walk off mats should be routinely maintained to avoid becoming a soil source.

Special Installation Requirements

- All plank products should be installed with end joints randomly staggered at least 8" apart.
- Planks and tiles can be combined on custom installations
- 18"x 36" and 12" x 24" tiles can be installed in an ashlar layout with a 9", 12" or 18" drop pattern, depending on the desired appearance. A square layout with all 4 corners lined up is not recommended.
- Using the Mohawk recommended adhesive and application will ensure good adhesion, tighter joints, and reduce the potential for indentation from rolling and static loads.

Installation Recommendations

Layout
Layout will depend on the product size and adhesive system being used. When installing 18" or 18"x 36" tiles it will be necessary to snap additional chalk lines perpendicular to the center line.

When planning the layout make sure tile and plank joints fall at least 6" (15.2cm) away from joints in the underlayment and or seams in existing flooring. Do not install over expansion joints.

Cutting
The product can be trimmed to fit using a sharp utility knife or tile cutter. When using a utility knife, score the surface of the tile and plank and flex it downward to break the tile at the score mark. Always place the cut edge against the wall.

Finishing the Job

- Clean any adhesive smears on the face of the flooring immediately while wet with a clean cloth and dilute solution of neutral cleaner and water. Mineral spirits can be used to remove dried adhesive.
- For installations with M700 or M950 adhesives: restrict all foot traffic for at least 24 hours after installation. Resume normal traffic and heavy rolling load traffic after 72 hours.
- For installations with MS160: restrict foot traffic for one hour after installation. Heavy rollling load traffice should be avoided for 24 hours.
- Always use strips of hardwood or plywood when moving heavy objects such as furniture or equipment over the floor even when using carts or dollies with wheels.

For additional questions or concerns, please call Mohawk Technical Service at 888.387.9881, Option 3

Pre-installation Substrate Moisture Testing: Installer should use this section to record moisture content readings and provide to the owner for their records.

Installation Information Total Square Feet Installed:_____		
Moisture Content	_____% Moisture Content of Substrate	
Test Method Used:	_____ Calcium Chloride (ASTM F1869) _____ RH % (ASTM F2170) _____ Electronic Meter (Tramex or equivalent) _____ pH Results	
Moisture Readings:		