

## Materials Required for Installation

- Tape Measure
- Full Face Tapping Block
- Saber Saw/Circular Saw
- Pull Bar
- Tile Cutter
- Carpenter Square
- Utility Knife/blades
- Chalk Line
- Safety Glasses

**NOTE: We recommend placing a single order for all cartons required for larger installations and commercial flooring projects.**

### Asbestos Warning

**Warning! DO NOT MECHANICALLY CHIP OR PULVERIZE EXISTING PREVIOUSLY INSTALLED 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 track hazard. Smoking by individuals exposed to asbestos fibers greatly increases the risk of seriously bodily harm. Unless you are positive that 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.

## Underlayments

Mohawk's vinyl flooring products can be installed directly over most existing floor coverings, EXCLUDING carpet (*including needle felt*), floating laminate, floating floors systems, Luan, and cushioned vinyl flooring. You may install directly over Ceramic (*well bonded with a skim coat*) PVC, VCT (*well bonded, on and above grade*), Terrazzo (*well bonded*), glued laminate, glued hardwood and fixed wooden boards provided they are installed over a wooden subfloor.

**NOTE: Do not use chemical adhesive removers to remove existing adhesive.**

### Wood underlayments

Wood subfloor systems require a double layer construction. The top layer must be underlayment grade as specified and warranted by the manufacturer. Always fasten underlayment in accordance with the manufacturer's recommendations. Any failure of the Mohawk flooring because of the underlayment is NOT the responsibility of Mohawk.

- A moisture test is required using a pin-type moisture meter. The moisture content must not exceed 14%.
- Wood subfloors must be structurally sound and in compliance with local building codes.
- Double-layered APA rated wood subfloors should be a minimum 1" total thickness, with a least 18" well-ventilated air space beneath.
- Insulate and protect crawl space with a 6mil vapor barrier.
- It is recommended that your chosen APA underlayment be designed for installation under resilient flooring and carry a written warranty.
- Underlayment can only correct minor deficiencies in the sub-floor while providing a smooth, sound surface on which to adhere the resilient flooring.
- Always follow the underlayment manufacturer's installation instructions.
- Wood subfloors directly fastened to concrete, or sleeper construction, are not recommended.
- APA rated Sturd-I-Floor panels are designed as combination underlayment/subfloor and are designed for carpet only. Installing Mohawk resilient flooring over Sturd-I-Floor panels would require installation of a minimum ¼" underlayment on top of the Sturd-I-floor subfloor.
- Mohawk resilient flooring is not recommended directly over fire-retardant treated plywood or preservative treated plywood. The materials used to treat the plywood may cause problems with adhesive bonding. An additional layer of APA rated ¼" thick underlayment should be installed over top any treated subfloor.

### OSB

- OSB panels and joints must be fastened and reinforced according to manufacturer's instructions. Completely sand the floor with a floor sander, so that the floor is smooth and flat. Note: The chips in OSB overlap. Without sanding properly, OSB has high and low spots throughout the floor that could telegraph through the vinyl.
- The sanded OSB surface must be primed using a Mohawk PrimeCoat acrylic floor primer.

### Particle board

- Particle board underlayment panels must be underlayment grade as specified and warranted by the manufacturer.
- Surface must be primed using a Mohawk PrimeCoat acrylic floor primer.

**NOTE: Perform moisture tests using a reliable moisture meter in multiple locations. Moisture readings should never exceed 14% for plywood, OSB, particle board, chipboard, or solid hardwood subfloors. If moisture readings exceed 14%, conditions must be corrected at the job site before installing the Mohawk flooring.**

### Resilient Floor Covering as an Underlayment

- Must be single layered, non-cushioned backed, fully adhered, and smooth.
- Show no signs of moisture or alkalinity.
- Wax, polish, grease and grime must be removed.
- Cuts, cracks, gouges, dents and other irregularities in the existing floor covering must be repaired or replaced.

**NOTE: The responsibility of determining if the existing flooring is suitable to be installed over rests solely with the installer/flooring contractor on site. If there is any doubt as to suitability, the existing flooring should be removed, or an acceptable underlayment installed over it. Installations over existing resilient flooring may be more susceptible to indentation.**

### Concrete

New and existing concrete subfloors should meet the guidelines of the latest edition of ACI 302 and ASTM F 710, "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring" available from the American Society for Testing and Materials.

Moisture levels of concrete slabs before, during and after installation must be 8 lbs. or less per 1000 square feet per 24 hours using an anhydrous calcium chloride test according to ASTM F1869 and pH must be between 5.0 and 9.0; or, if using ASTM F2170 InSitu Probes, should be less than 90% RH (*relative humidity*). Three tests should be conducted for areas up to 1,000 Sq. Ft. One additional test, for each additional 1,000 Sq. Ft. Always measure, record and keep your testing results.

Mohawk highly recommends a minimum 6-mil polyethylene vapor barrier with a density of 0.92 lbs/cubic foot be used for all floating floor installations. The 6-mil polyethylene vapor barrier should have an overlap of 8 inches and taped at the seams. The 6-mil polyethylene vapor barrier should not be used in lieu of moisture issues, the moisture must be mitigated by other means. Claims related to cupping and/or peaking without a 6- mil polyethylene vapor barrier could be denied.

The final responsibility for determining if the concrete is dry enough for installation of the flooring lies with the floor covering installer.

- Never use liquid adhesive remover or solvent cleaners for removing old adhesive residue or other substances on the substrate; their use will cause future failures in the new flooring.
- On or below-grade slabs must have an effective vapor retarder directly under the slab.
- Concrete floors shall be flat and smooth within 3/16 inch over a 10-foot span.
- F-Number System: Overall values of FF 36/ FL 20 may be appropriate for resilient floor coverings.
- Glossy or waxed floors may require a higher value FF 75/ FL 50 to prevent telegraphing issues.

### Old Adhesive Residue

If the adhesive is asphalt-based (*cut-back*) or any other type of adhesive is present, it must be dealt with in one of two ways:

1. It may be mechanically removed using methods such as bead blasting or scarifying, using a licensed professional contractor (*See Asbestos Warning above*).
2. A Portland-based self-leveling underlayment may be applied over it. Check with the underlayment manufacturer for suitability, application instructions, and warranties.

### Other approved underlayments

- Self-leveling and patching compounds (*latex fortified Portland cement based only*).
- Radiant heat floors (*not exceeding 85°F (29°C)* and approved by the manufacturer for the use of their product with resilient vinyl flooring applications).
- Gypcrete can be utilized when necessary due to radiant heat and in high rise buildings. Gypcrete must be sealed using a Mohawk PrimeCoat acrylic floor primer to stabilize the surface. All issues with gypcrete cracking, crumbling, powdering and resulting in the release of adhesive bond are NOT warranted by Mohawk.

## Storage and Handling

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- Flooring must be acclimated in the room of installation between 55-85°F (*13°-29°C*) for 48 hours before installation. These temperatures should be maintained before, during and thereafter the installation is complete.
- Always store and transport rigid luxury vinyl flooring on a flat surface in neat stacks to prevent warping. Never store the cartons upright or in moist, dusty rooms or in places with extreme temperatures. Cartons should be evenly stacked and away from any heating/cooling ducts or direct sunlight.
- Installation in enclosed Three Season Rooms: acclimate product and room at 55°- 85°F (*13-29°C*) for 48-hours prior, during and 48 hours after installation is complete. Maximum installation span for Three Season Rooms is 40' x 40' (*12.2m X 12.2m*) with a 1/2" (*13mm*) minimum expansion for the perimeter or all vertical objects.

## Subfloor and Wall/Door Preparation

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- Floor must be clean, smooth, flat and dry. Remove all foreign substances such as wax, grease, dirt, construction markings and contaminants, and any substance or chemical that would interfere with a good bond. Fill all holes and cracks with a latex fortified Portland cement-based patching compound. Sand high spots to eliminate the possibility of telegraphing. Prime floor if needed with a Mohawk acrylic latex primer to prevent over absorption of adhesives, dust containment, and to ensure a better bond of the adhesive to the subfloor.

- Any unevenness of more than 3/16 inch over a 10-foot span (5 mm over a length of 3 m) must be leveled out. Remove bumps in the subfloor by sanding or scraping.
- Fill any low spots in the subfloor with a Portland cement based leveling compound.
- Ceramic tile and embossed flooring exceeding the above requirements will require skim coating with a Portland cement-based patch to avoid bottom up pattern telegraphing.
- Remove any existing floor molding. Removal of wall baseboards is optional providing quarter round is installed to cover the required expansion gap.
- Undercut doorjamb allowing the rigid luxury vinyl flooring to slip under doorjamb/case molding.
- Sweep the subfloor clean. The floor must also be free of all contaminates.

## Job Site Conditions

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- It is recommended that resilient floor covering installation shall not begin until all other trades are completed.
- Areas to receive flooring shall be clean, fully enclosed, with the permanent HVAC set at a uniform temperature range of 55°F(13°C) and 85°F(29°C) and maintained following the installation.
- Adhesive working and open times vary based on job conditions, substrate, temperature and humidity.

### Temperature - Ambient

- Controlled environments are critical for testing and installation. Fully operational HVAC systems are the best way to ensure temperature and humidity control.
- Do not install resilient flooring products until the work area can be temperature controlled. Minimum installation temperature is 55°F (13°C) with a maximum installation temperature of 85°F(29°C) and humidity below 65% for 48-hours prior to, during and after pre-installation testing.

**NOTE: Do not install flooring if subfloor moisture test results exceed recommended limits.**

### Temperature - Radiant Heat

- Radiant heated substrates must never exceed 85°F(29°C) surface temperature.
- Several days prior to installing resilient products over newly constructed radiant heated systems, make sure the radiant system has been on and operating at maximum temperature to reduce residual moisture within the concrete.
- Three days prior to installation, lower the temperature to 65°F(18°C), and 24-hours after installation, gradually increase the temperature in increments of 5°F.
- After continuous operation of the radiant system, ensure the surface of the floor does not exceed 85°F(29°C).

## Installation Instructions

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Inspection of flooring material prior to installation is required. Any defects should be immediately reported to the retail store from which the flooring was purchased before installation. Mohawk will not be responsible for labor costs to repair or replace material with defects that were apparent before or noticed at the end of an installation.

**NOTE: Your starter rows will consist of your first and second row to provide additional stability. See Diagram 1 for examples of the instructions below.**

**NOTE: Do not install cabinets on top of vinyl flooring.**

- The first plank (#1) of the first row should be a full-length plank. Trim off the profiles facing the wall and position the cut edges adjacent to the wall making sure that you leave an expansion gap of 3/8 inch (9 mm) between the plank and wall, using spacers as needed. The entire installation requires a 3/8" expansion space.

**NOTE: Cutting tiles and planks may be cut with a small resilient tile cutter or scored with a utility knife and snapped.**

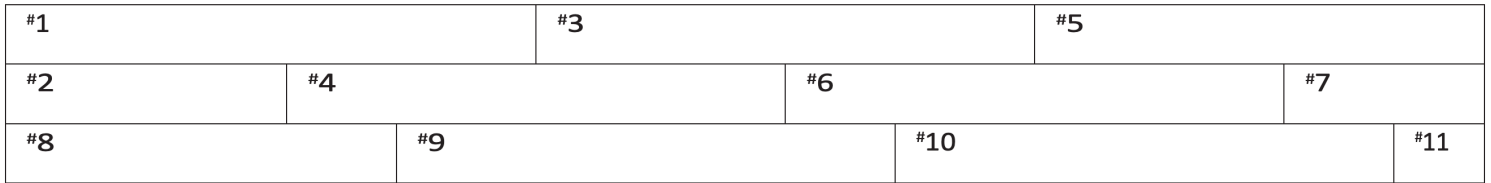
- The first plank (#2) of the second row should not exceed 50% of the length of the plank.
- Align the first plank (#2) of the second row with the first plank (#1) of the first row at an angle and engage the long side joint by folding down until joints lock. The factory end should face in from the perimeter of the installation. Cut edges always face away from the field of the installation. To properly seal the joint, if necessary use a small scrap of plank/tile to **gently** tap along the entire length of the plank/tile. Lock the scrap piece-groove to tongue or tongue to groove-to the plank/tile requiring tightening and gently tap the edge of the scrap with a tapping block. This will bring the tile edges tight together.
- Align the second plank (#3) of the first row against the end joint of plank (#1) of the first row at a slight angle and fold down until joints lock.
- When joining the next plank (#4) to the first plank in the second row (#2), join the short side edges first. There will be a gap on the long side joints when the plank is rotated down.
- Raise the outside long edge of the plank upward approximately 1". This will raise the outside long edge of planks in that row. Maintain this angle as you push the plank in until the long edge of the plank meets the long edge of the first row. Rotate downward on the plank until the joint locks. Tap the long side or short side joints closed, if necessary, by using a tapping block or pull bar.
- Align the third plank (#5) of the first row against the end joint of plank (#3) of the first row at a slight angle and fold down until joints lock.
- When joining the next plank (#6) to the second plank in the second row (#4), join the short side edges first. There will be a gap on the long side joints when the plank is rotated down.

- Raise the outside long edge of the plank upward approximately 1". This will raise the outside long edge of planks in that row. Maintain this angle as you push the plank in until the long edge of the plank meets the long edge of the first row. Rotate downward on the plank until the joint locks. Tap the long side or short side joints closed, if necessary, by using a tapping block or pull bar.
- When joining the next plank (#7) to the third plank in the second row (#6), join the short side edges first. There will be a gap on the long side joints when the plank is rotated down.
- Raise the outside long edge of the plank upward approximately 1". This will raise the outside long edge of planks in that row. Maintain this angle as you push the plank in until the long edge of the plank meets the long edge of the first row. Rotate downward on the plank until the joint locks. Tap the long side or short side joints closed, if necessary, by using a tapping block or pull bar.
- After each row is complete ensure, there is gap no less than 3/8" (10mm) around the perimeter.
- Repeat these steps to complete the installation.

**NOTE: Check floor squareness and straightness regularly.**

Diagram 1

Wall



- To install the final row of planks/tiles, you will usually need to cut them. We recommend the following: lay a plank face up on top of the last row installed with the tongue and groove facing the same way as the field of the installation (*This will represent your final row to be trimmed*). Place another plank against the edge of the wall and on top of the final row. Mark the plank underneath. Cut the plank and install the last row leaving ample expansion space.

**NOTE: In place of a resilient tile cutter, a miter or circular saw (with the blade cutting into the design of the plank) can be used to cut the rigid luxury vinyl flooring. A utility knife can also be used, scoring the top of the pattern and snapping the plank. It will be necessary to cut the foam underlayment after snapping the plank.**

**NOTE: Maintain a 3/8" (.95 cm) expansion space around all walls and vertical objects. Quarter round or baseboard molding will cover this expansion space.**

**NOTE: Maintain the 3/8-inch space around cabinets, pipes, toilet flanges and any obstacle in the floor (It is not recommended to trim around a toilet, however leave the expansion space around the toilet flange)**

## Additional Instructions/Notes

### Multi-Width Plank Installation

- To install the multi-width product, install a row of the 7" wide plank alternating between the 5" and 9" plank sizes. Install a 5" row, then 7" row, then 9" row, and then 7" row again, and then repeat this pattern.

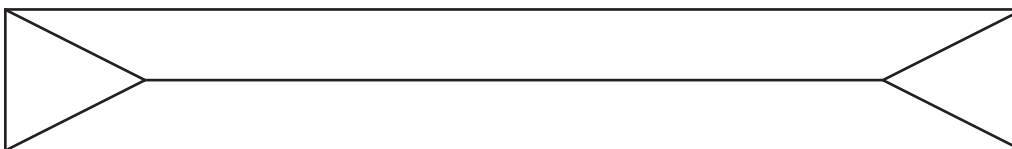
### Molding and Transitions

- All floor molding and transition strips need to provide a 3/8-inch (10mm) expansion space to allow expansion and contraction.
- Ensure moldings and transitions strips will not pinch the flooring. This will prevent the floor from properly expanding and contracting as well as allowing the structure to move freely over the floor.
- For rooms that have a run greater than 50 feet, a transition strip must be installed.
- Never allow nails or screws to enter the rigid luxury vinyl flooring or the expansion zone around the flooring perimeter as it will prevent proper expansion and contraction of the structure and flooring.
- Quarter round, base board, door jambs etc. should never pinch the flooring. This will prevent the floor from properly expanding and contracting as well as allowing the structure to move freely over the floor.

### Plank Replacement

Should one of your planks/tiles become damaged and need to be replaced, follow these simple instructions:

1. Mark the top of damaged plank/tile with a marker or pencil. Make two triangle cuts near the end joint and then connect the points with one long cut in the middle of the plank/tile. (See diagram below)



**SCORE TILE AS SHOWN**

- The use of a chisel to tap through the plank (*on scored triangle cut points*) works well to complete the cut.
- Lift and remove damaged tile.
- With the pattern side facing up on the new replacement plank/tile, trim off the short lip (*tongue side*) along the length of the plank and the groove on the lower profile of the end joint making it flush with the edge of the plank. Be careful not to damage the finish surface of the plank.



- It will be necessary to remove the slim white insert from the end joint existing plank to allow a proper fit.
- Cut several pieces of acrylic double face tape made for vinyl floors and slide under the edges of the existing floor on the two edges where the replacement plank/tile will have tongue trimmed off. The end joint will need a section of tape under it to secure it. Tape should face sticky side up; leave the paper on the lower side.
- Using MOHAWK M7 Seam Sealer, run a small bead of sealer on the groove edge of the plank of the existing floor where the replacement plank/tile will rest.

**NOTE: The long tongue of the replacement plank/tile and the uncut compression fit end joint will not need tape or seam sealer, as you will be using the plank's/tile's locking mechanism.**

- Install replacement plank/tile by angling the long groove of the replacement plank under and over the tongue of the floor plank until the finish edge of the replacement plank is tight against the finish edge of the floor plank, and the compression end joint is lined up. Rotate down, locking the length tongue joint then pressing the end joint with your thumb or palm of your hand to lock into place.
- Wipe any excess sealer that comes to the surface of the tiles with a damp cloth and follow with a dry cloth to assure all sealer is removed from tile surface.
- Keep foot traffic off the replaced plank/tile for 24 hours.

**NOTE: Mohawk will not be held responsible for problems that may arise for alternative seam sealers. Please contact the alternative seam sealer's manufacturer with issues**

## Rigid Care & Maintenance

To help protect and keep your floor clean, following these proper care and maintenance guidelines:

### Preventative Maintenance

- Prevent indentations and scratches by using non-staining floor protectors on the legs of chairs, appliances and all heavy furniture. Floor protectors should be at least one inch in diameter.
- Do not flood floor or subject to standing water.
- Protect your floor from tracked-in dirt by using mats at all outside entrances. Mats should have a non-rubberized backing and be marked as non-staining.
- Avoid tracking-in tar or asphalt from driveways.
- Avoid high heel shoes on your floor as they can cause permanent indentations.
- Protect your floors against burns. Burns from cigarettes, matches or other extremely hot items can cause permanent damage.
- Avoid exposure to direct sunlight for prolonged periods, as this can cause discoloration.

### Cleaning & Maintenance

- Sweep the floor regularly with a soft bristle broom to remove loose dirt.
- Wash the floor with non-abrasive, neutral PH floor cleaner.
- For every day maintenance, a mop moistened with warm water will suffice.
- Spills should be cleaned up immediately.

### DO NOT use the following on your Mohawk rigid luxury vinyl floor

- Soap based detergents
- Abrasive or mop and shine products
- Floor wax
- Vacuum cleaners with a rotating beater bar
- Ammonia
- Bleach solution greater than 3%

**NOTE: Always read the cautionary information on all cleaners prior to use.**

**NOTE: Never push, pull or drag furniture, appliances or other items across the floor. When moving furniture or heavy items, always lift and carry the items. To minimize the risks of scratches and gouges when moving heavy objects, place plywood underlayment between the flooring and object to be moved.**

## How to Treat Stains, Spills & Scuffs

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Follow the remedies in order. Unless instructed otherwise, use a clean, white cloth or towel with products recommended for Mohawk LVT flooring. Always rinse the affected area with clean water after treatment.

### **The Stain or Spill:**

Acids, alkalis, blood, ketchup, mustard, food, fruit, fruit juices, candy, cleaners, strong soaps, dye, dye markings, urine and feces, grass, iodine, mercurochrome and rust.

### **The Remedy:**

- First, remove as much solid material as possible.
- Scrub area with cleaner full strength.
- Rub the area with isopropyl alcohol.
- If rust stain does not respond, use lemon juice or a cream of tartar solution.

### **The Stain or Spill:**

Dry cleaning fluids, lacquer and latex paint, nail polish, solvents, oil-based paints, wood stains and varnish

### **The Remedy:**

- If substance is dry, gently peel it from the floor. Avoid sharp instruments that could scratch floor.
- Scrub area with non-abrasive cleaner.
- Rub lightly with odorless mineral spirits or paint thinner.

**NOTE: DO NOT USE ACETONE OR NAIL POLISH REMOVER!**

### **Substances that Won't Wipe Up:**

Adhesives, chewing gum, oil, grease, candle wax and tar

### **The Remedy:**

- First, remove as much solid material as possible.
- Carefully remove excess with a spoon or fingernail.
- Scrub area with non-abrasive cleaner.
- Rub lightly with odorless mineral spirits, isopropyl alcohol or lighter fluids.

### **Scuffs & Smudges:**

Rubber heel marks, shoe polish, scuffs and smudges

### **The Remedy:**

- Rub the scuff with fingertip, rubber will come right off. The friction from the rubbing will remove rubber.
- Scrub area with non-abrasive cleaner.
- Rub lightly with isopropyl alcohol or lighter fluid.

**CAUTION! Isopropyl alcohol, lighter fluid, odorless mineral spirits and paint thinner are flammable solvents. Carefully read and follow cautionary information on their respective labels. Keep traffic off treated area for 30 minutes.**