

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: This product must be installed in accordance with installation instructions outlined in this document so as not to void the applicable warranties.

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 **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 you are positive the 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

These vinyl flooring products can be installed directly over most existing floor coverings, EXCLUDING carpet (*including needle felt*), floating laminate, floating floor 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.

Wood Underlayments

All wooden subfloors, including plywood, OSB, particleboard, chipboard, wafer board, and similar materials, must be structurally sound and installed in accordance with the recommendations of the American Plywood Association (APA) as well as the specific manufacturer's guidelines.

- 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.
- Wooden subfloors must be rigid and supportive for proper installation and performance. Inspect floors for floor flatness and floor deflection between floor joists, and if needed, add an additional layer of APA-rated underlayment, install it per the manufacturer's instructions. Ensure all wood subfloors have 18 inches ventilated air space beneath.
- Insulate and protect crawl space with a 6-mil, polyethylene vapor barrier.
- It is recommended that your chosen APA underlayment be designed for installation under resilient flooring and carry a written warranty from the underlayment manufacturer.
- An underlayment can help provide a smooth surface for installation however one will not correct defects in the subfloor such as deflection or unevenness. Structural work on the subfloor may be required prior to the start of the flooring installation.
- 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 this resilient flooring over Sturd-I-Floor panels would require installation of a minimum 1/4-inch underlayment on top of the Sturd-I-Floor subfloor.
- It is NOT recommended to install this flooring directly over fire-retardant treated or preservative treated plywood. An additional layer of APA-rated, 1/4-inch thick underlayment should be installed over top of any treated subfloor.

OSB

- OSB panels and joints must be fastened and reinforced according to the OSB manufacturer's instructions.
- Be aware that OSB panels, and panel joints, can exhibit high and low spots that may telegraph to the surface of the flooring after installation. It is the installer's responsibility to take measures to correct such undulations and unlevel panel joints which are not covered by any Mohawk warranty.

NOTE: The chips in OSB overlap. Without sanding properly, OSB has high and low spots throughout the floor that could

telegraph through the vinyl.

Particle Board

- Particle board underlayment panels must be underlayment grade as specified and warranted by the manufacturer.

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 jobsite before installing the flooring.

Resilient Floor Covering as an Underlayment

- Must be single layered, non-cushion 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 F710 "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 less than or equal to 8 pounds / 1,000 square feet / 24 hours using an anhydrous calcium chloride test according to ASTM F1869 or if using ASTM F2170 in-situ probes, moisture levels should be less than 90% RH (*relative humidity*). These tests should be conducted for areas up to 1,000 square feet. Conduct one additional test for each additional 1,000 square feet. Always measure, record, and keep your testing results. The pH of the slab must be between 5.0 and 9.0 pH as tested using test standard ASTM F710.

A minimum 6 mil polyethylene vapor barrier with a density of 0.92 pounds/cubic foot is recommended for all floating floor installations and required for WetProtect Gold warranty coverage. The vapor barrier should have an overlap of 8 inches and should be taped at the seams. The vapor barrier should not be used to resolve moisture issues; the moisture must be mitigated by other means. Claims related to cupping and/or peaking over concrete must meet the moisture levels of concrete slabs described above to be considered for evaluation. For Wet Protect Gold warranty coverage, a proper vapor barrier must be in place for an evaluation.

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

- Never use liquid adhesive remover or solvent cleaners for removing old adhesive residue or other substances on the substrate. Use of these cleaners will cause future failures with 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; 1/32 inch over a 12-inch span per ASTM F710.
- 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 of FF 75/ FL 50 to prevent telegraphing issues.

Other Approved Underlayments

- Self-leveling and patching compounds (*latex-fortified, portland cement-based only*).
- Gypcrete can be utilized when necessary due to radiant heat and in high-rise buildings. Gypcrete must be sealed using a manufacturer-approved acrylic floor primer to stabilize the surface. All issues with gypcrete cracking, crumbling, and powdering are NOT the responsibility of Mohawk.

Storage and Handling

- Acclimation is not required; it is best to install in temperatures between 35°F and 115°F with a RH reading between 35% and 65% for best results. It is recommended when HVAC becomes operational to increase/decrease gradually increase/decrease in 5°F increments until desired temperature is reached.
- 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 stored away from any heating/cooling ducts and direct sunlight.

Subfloor and Wall/Door Preparation

- Floor must be clean, smooth, flat, and dry. Remove all foreign substances such as wax, grease, dirt, construction markings and contaminants, and any other substances or chemicals. Fill all holes and cracks with a latex-fortified, portland cement-based patching compound. Sand high spots to eliminate the possibility of telegraphing.
- Any unevenness of more than 3/16 inch over a 10-foot span and 1/32 inch over a 12-inch span (*5 mm over a length of 3 m and 1 mm over a length of 30.5 cm*) 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 to allow the rigid luxury vinyl flooring to slip under doorjamb/case molding.

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 cement-based, self-leveling underlayment may be applied over it. Check with the underlayment manufacturer for suitability, application instructions, and warranties.

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

Jobsite Conditions

- It is recommended that installation should not begin until all other trades have completed their work.
- Work area temperature must be maintained between 35°F (1.7°C) and 115°F (46°C) and humidity between 35% and 65% for 48 hours prior to, during, and after installation.
- For three-season rooms and sunrooms, maximum installation span is 50 ft x 50 ft (12.2 m x 12.2 m) with a 1/2-inch (13 mm) minimum expansion for the perimeter or all vertical objects.
- The areas to receive flooring should be clean, fully enclosed, with a uniform temperature range between 35°F (1.7°C) and 115°F (46°C) and maintained following the installation.

Temperature – Ambient

- Controlled environments are critical for testing and installation. Fully operational HVAC systems are the best way to ensure temperature and humidity control.
- Recommended minimum installation temperature is 35°F (1.7°C) with a maximum installation temperature of 115°F (46°C), and humidity below 65% for 48 hours prior to, during and after installation for areas that will be climate controlled.
- Three-season rooms' post installation temperature range can be between -25°F and 160°F.

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). Twenty-four 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

Inspection of flooring material prior to installation is required. Before installation, defects should be immediately reported to the retail store from which the flooring was purchased. Mohawk will not be responsible for labor costs to repair or replace material with defects that were visible at the time of installation.

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

NOTE: Never install cabinets or other affixed, vertical objects over 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-inch expansion space.
- When installing in three-seasons rooms and sunrooms use an expansion gap of 1/2" (13 mm).

NOTE: 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 tapping block to GENTLY tap along the entire length of the plank. Lock the tapping block (*groove to tongue or tongue to groove*) to the plank requiring tightening and gently tap the edge with a tapping block. This will bring the plank edges tightly 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 one inch. 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 one inch. 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 one inch. 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 a gap of no less than 3/8-inch (10 mm) around the perimeter.
- Repeat these steps to complete the installation.

NOTE: Check floor squareness and straightness regularly.

Diagram 1 Wall

#1		#3		#5	
#2	#4		#6		#7
#8		#9		#10	
				#11	

- 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.
- Remove all spacers.
- The entire perimeter of the installation must be sealed with the WetProtect® molding system and 100% silicone sealant or PerimeterSeal™ applied in accordance with the installation instructions. For sections where the WetProtect molding system or PerimeterSeal cannot be used, seal the perimeter with 100% silicone sealant, as follows. DO NOT use acrylic sealant.
- PerimeterSeal tape may be used to seal floor perimeters, corners, and transitions. (*See PerimeterSeal™ instructions.*)
- First, fill all expansion spaces with 3/8-inch compressible PE foam backer rod and cover with silicone sealant.
- Prior to installing the moldings, apply silicone sealant to the portion of the molding or transition that will contact directly with the flooring surface.
- Install moldings and immediately wipe away any excess silicone sealant.
- Apply silicone at connections to doorframes or any other fixed objects.

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, laying plank over flat surface with area to be scored hanging over edge, and snapping the plank. It will be necessary to cut the foam underlayment after snapping the plank.

NOTE: Maintain the 3/8-inch space around cabinets, pipes, toilet flanges, walls, vertical objects, and any obstacle in the floor. Quarter round or baseboard molding will cover this expansion space. (It is not recommended to trim around a toilet; however, leave the expansion space around the toilet flange.)

Additional Instructions/Notes

Molding and Transitions

- All floor molding and transition strips need to provide a 3/8-inch (10 mm) 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 are climate controlled, and have a run greater than 60 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 flooring structure.
- Quarter round, base board, door jambs, etc., should never pinch the flooring as this may prevent the floor from properly expanding and contracting.

Care and Maintenance

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

Preventative Maintenance

- Prevent indentations and scratches by using nonstaining floor protectors on the legs of chairs, appliances, and all heavy furniture. Floor protectors should be at least one inch in diameter.
- Do not overwet or flood the floor with water or subject the floor 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-heeled 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.
- Clean the floor with nonabrasive, neutral PH floor cleaner.
- For everyday maintenance, a mop moistened with warm water will suffice.
- Spills should be cleaned up immediately.
- A residential steam mop can be used, provided the steam is applied to a microfiber pad and not directly to the floor. Set the temperature of the steam mop to the lowest setting. Do not turn the steam mop on or off over SolidTech R and always keep steam mop in motion during operation.
- Steam mop should NOT be left stationary on one spot when operating, starting, or turning off.
- Never allow mop to heat up on floor.
- Never allow mop to cool down on floor.
- Never leave mop stationary more than 10 seconds. Sweep the floor regularly with a soft bristle broom to remove loose dirt.

DO NOT use the following on your luxury vinyl floor:

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|-------------------------|--------------------|--------------------------|-----------------------------------|
| • Soap-based detergents | • Abrasive or mop- | • Vacuum cleaners with a | • Ammonia |
| • Floor wax | and-shine products | rotating beater bar | • 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.