

PAC
International



**NOISE
CONTROL
SOLUTIONS**

REAL SOLUTIONS IN CONSTRUCTION

PAC RSIM
Technical and Installation Manual

Manufactured in the USA for PAC International LLC



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GENERAL INFORMATION

The PAC RSIM was engineered to provide superior impact insulation for a wide range of flooring applications. It can be installed under most types of grouted, glued, and floating floors, including ceramic tile, natural stone, solid wood, engineered wood, laminate, LVT, SPC, WPC, carpet, and more. Sheet vinyl is not approved for installation over PAC RSIM. All floor covering assemblies shall have prior installation approval.

JOB SITE CONDITIONS

Areas to receive PAC RSIM should be weather tight and maintained at a constant room temperature of 65°F (10°C) or greater for 48 hours before, during, and after installation.

SUBFLOOR REQUIREMENTS & PREPARATION

Note: Please follow subfloor requirements and preparation recommendations as specified by the flooring manufacturer.

1. All subfloors/substrates must be inspected prior to installation of PAC's RSIM.
2. PAC's RSIM can be installed over concrete, gypsum concrete, wood, and approved self-leveling materials.
3. Wood subfloors should be double construction, rigid, and free from movement.
4. Wood subfloors must meet the minimum deflection requirements for the intended finish flooring as specified by the flooring manufacturer, building code, and any applicable industry guidelines.

Note: Particleboard, "chipboard", Masonite, and Lauan plywood are not suitable underlayments.

5. Concrete floors must be fully cured and permanently dry. Subfloors shall be dry, clean, smooth, level, and structurally sound. The subfloor surface should be free of dust, solvents, paint, wax, oil, grease, asphalt, sealers, curing and hardening compounds, alkaline salts, old adhesive residue, and other extraneous materials according to ASTM F710.
6. Subfloors should be smooth to prevent irregularities, roughness, or other defects from telegraphing through the material. The surface should be flat to the equivalent of 3/16" (3.9mm) in 10 LF, or as recommended by the flooring manufacturer.
7. Mechanically remove all traces of old adhesives, paint, and other debris by scraping, sanding, or scarifying the substrate. DO NOT use solvents.
8. Grind high spots until level and fill low spots with a patching/leveling compound.
9. All saw cuts (control joints), cracks, indentations, and other non-moving joints in the concrete must be filled with a Portland-based patching/leveling compound and dried thoroughly.
10. Any concrete subfloor can be a source of moisture-related flooring failures. It is the installer's responsibility to test the concrete or other cement-like material for moisture.
11. The maximum concrete moisture content or RH (relative humidity) must be measured using the ASTM F2170 standard test method and shown to be below the maximum RH for the intended adhesive. If moisture levels are higher, then the installation MUST NOT proceed until the problem is corrected.

Note: The selected Portland-based patching and self-leveling materials must be moisture-resistant and rated to withstand the RH levels on the project.

12. In the event that a moisture mitigation system is required, it must conform to the ASTM F3010 Standard Practice for Two-Component Resin Based Membrane Forming Moisture Mitigation Systems for use Under Resilient Floor Coverings. In addition, the finished prepared surface on which the flooring is to be installed must conform to the ASTM F710 standards.
13. Perform pH tests on all concrete floors. If greater than the allowable limit of the selected adhesive, neutralize prior to installation.

HAZARDS

Silica Warning

Concrete, floor patching compounds, toppings, and leveling compounds can contain free crystalline silica. Cutting, sawing, grinding, or drilling concrete can produce respirable crystalline silica particles (1-10 micrometers). Respirable silica is classified by OSHA as an IA carcinogen and is known to cause silicosis and other respiratory diseases. Avoid actions that cause dust to become airborne. Use local or general ventilation or protective equipment to reduce exposure below applicable exposure limits.

Lead Warning

Certain paints may contain lead. Exposure to excessive amounts of lead dust presents a health hazard. Refer to applicable federal, state, and local laws and the publication "Lead Base Paint: Guidelines for Hazard Identification and Abatement in Public and Indian Housing," available from the United States Department of Housing and Urban Development.

Asbestos Warning

Resilient flooring, backing, lining felt, paint, and asphaltic "cutback" adhesives could contain asbestos fibers. Avoid actions that cause dust to become airborne. DO NOT sand, dry sweep, dry scrape, drill, saw, bead blast, mechanically chip, or pulverize. Regulations may require that the material be tested to determine asbestos content. Consult the documents titled "Recommended Work Practices for Removal of Existing Resilient Floor Coverings," available from the Resilient Floor Covering Institute.

Material Storage and Handling

1. Deliver the material to the job site in its original unopened packaging with all labels intact.
2. Appropriately store the material inside to prevent damage.
3. Inspect all material for visual defects before beginning the installation.
4. Verify the material delivered is the correct type, thickness, and amount. Report any discrepancies immediately.

Note: PAC International, LLC. will honor no labor claim on material installed with any visually apparent defects.

5. The material and any adhesive must be acclimated at room temperature for a minimum of 24 hours before starting the installation.
6. Roll material is stretched slightly when it is rolled at the factory. At the job site, the installer should allow all cuts to relax before gluing down. Shaking the material once it is unrolled can help it to relax more quickly.

Installation of PAC RSIM

General Installation Guidelines

1. Attach the Perimeter Isolation Strip to the wall (see Figure 1) of the entire subfloor area intended for installation and around the perimeter of any protrusions using tape or spray adhesive. It will be trimmed later at the height of the finished floor.

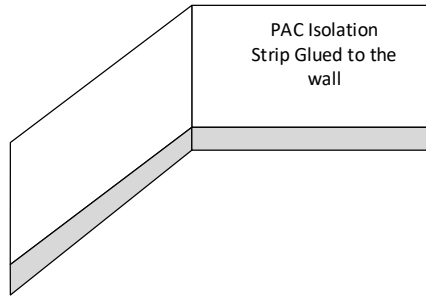


Figure 1

Note: The Perimeter Isolation Strip isolates the floor from the wall and break the vibration transmission path - it is essential to FIRST install the Perimeter Isolation Strip before placing and trimming the PAC RSIM material.

2. Assume the walls of the room are not square. Using a chalk line, create a starting point for an edge of the material to follow.
3. Remove the shrink wrap from the PAC RSIM roll and unroll it onto the floor. Allow it to relax for at least 2 hours. Shaking the material once it is unrolled can help it to relax more quickly. It is okay to flip over the PAC RSIM in case of curling. It may be necessary to weight the material to keep it flat when adhering.
4. Place the PAC RSIM so that it is perpendicular to the subsequent installation direction of the finished flooring (see Figure 2).

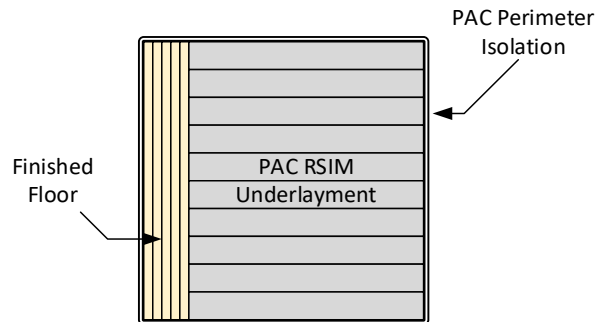


Figure 2

5. Trim as necessary to fit the surface area to be covered.
6. Align the roll edges with each other. The edges must contact but not overlap.

Gluings PAC RSIM

Note: When using grouted or fully adhered flooring materials, PAC RSIM shall be fully adhered to the substrate with a suitable adhesive. No substitutions are permitted. PAC RSIM may be loose laid for floating floors.

1. After the PAC RSIM has been rolled out and allowed to relax, fold the material halfway back (half the width of the roll) to expose the substrate. Spread adhesive on the exposed substrate using the proper trowel:
 - a. Less than 4mm PAC RSIM - Use a 1/16" x 1/32" x 1/32" U-notched trowel
 - b. 4mm and thicker PAC RSIM - Use a 1/16" square-notched trowel

Note: Temperature and humidity affect the adhesive open time; monitor on-site conditions and adjust the open time accordingly.

2. Carefully lay the material into the wet adhesive. DO NOT let the material “flop” into place as this will trap air under the material.
3. Fold over the second half of the first sheet and the first half of the second sheet (see Figure 3).

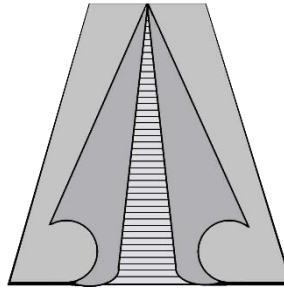


Figure 3

4. Spread the adhesive. At the seams, spread the adhesive at 90 degrees to prevent the excessive adhesive from oozing up to the surface of the material. Never leave adhesive ridges or puddles which can telegraph up through the material.
5. Continue the process for each consecutive drop, always folding the material back into the wet adhesive.
6. Within 45 minutes, use a 35 to 75-lb roller to roll the floor to ensure proper adhesive transfer. Overlap each pass of the roller by 50% of the previous pass.
7. Repeat this procedure for all sections of the PAC RSIM until the room is finished.

Alternative Installation Methods

General

1. Follow the flooring manufacturer’s directions for installing the flooring. Use their recommended adhesives, procedures, and equipment.
2. DO NOT mechanically fasten any material through the PAC RSIM. Any mechanical connection, such as nails, screws, staples, etc., will transmit noise through the PAC RSIM to the building structure, compromising the impact insulation provided by the PAC RSIM.

Floating Flooring

Note: Gluing down the PAC RSIM is not required for floating floors.

1. Attach the Perimeter Isolation Strip per the directions above.
2. Dry lay the rolls of PAC RSIM onto the subfloor with duct or carpet tape to hold the seams together.

Plywood or Cement Board

1. If a flooring manufacturer recommends the installation of a layer of plywood or cement board between the PAC RSIM and the finished flooring, glue the recommended board to the PAC RSIM using a suitable adhesive.
2. Apply adhesive to the PAC RSIM using the manufacturer’s recommended trowel size.
3. DO NOT mechanically fasten any material through the PAC RSIM. Any mechanical connection, such as nails, screws, staples, etc., will transmit noise through the PAC RSIM to the building structure, compromising the impact insulation provided by the PAC RSIM.

Sheet Vinyl or Luxury Vinyl Tile (LVT) and Plank (LVP)

1. Sheet vinyl IS NOT approved for installation over the PAC RSIM.
2. For LVT installation, refer to the LVT manufacturer’s instructions.

Ceramic and Porcelain Tile

1. Apply approved thinset mortar directly onto the PAC RSIM as directed by the mortar manufacturer.
2. Follow the mortar and tile manufacturers' installation procedures.

Glue Down Wood Flooring

1. Follow the flooring manufacturer's directions for installing the flooring over the PAC RSIM. Use their recommended adhesives, procedures, and equipment.
2. DO NOT mechanically fasten any material through the PAC RSIM. Any mechanical connection, such as nails, screws, staples, etc., will transmit noise through the PAC RSIM to the building structure, compromising the impact insulation provided by the PAC RSIM.

Nailed Down Wood Flooring

1. A plywood or other suitable surface must be provided between the wood flooring and the PAC RSIM so that the fasteners for the wood flooring do not penetrate the PAC RSIM.
2. Follow the flooring manufacturer's directions for installing the flooring over the PAC RSIM. Use their recommended adhesives, procedures, and equipment.
3. DO NOT mechanically fasten any material through the PAC RSIM. Any mechanical connection, such as nails, screws, staples, etc., will transmit noise through the PAC RSIM to the building structure, compromising the impact insulation provided by the PAC RSIM.

Baseboard

1. Trim any excess Perimeter Isolation Strip flush or below the surface of the finished floor.
2. Install the baseboard to the wall making sure to leave a gap of at least $\frac{1}{4}$ " between the baseboard and the top of the finish floor.
3. Seal between the baseboard and the floor surface with an ASTM C920-compliant elastomeric joint sealant.

Note: Failure to leave a gap between the baseboard and the finish flooring can create a transmission path for sound and vibration that goes around (flanks) the isolation provided by the PAC RSIM and results in poor acoustical performance.

Recommended Materials

Note: All materials shall be delivered to the job site in the original containers with all manufacturers' identification and labels intact. Unauthorized modification to any product is not permitted.

Approved Urethane Adhesives

1. RubberLogix LX-100 and RLX-110
2. Bostik's Best
3. Bostik Green Fusion
4. Mapei Ultrabond ECO 980
5. BASF Chemrex 941

Approved Thin Set Materials

1. ANSI A118.4 Standard Modified Dry-Set Cement Mortar
2. ANSI A118.15 Improved Modified Dry-Set Cement Mortar

Approved Grout Materials

1. ANSI A118.6 Standard Performance Grout
2. ANSI A118.7 High Performance Grout
3. ANSI A118.8 Modified Epoxy Grout

Approved Gypsum Primers

1. Mapei Primer T
2. Ardex P51
3. Bostik Universal Primer
4. Specco S-55

Approved Cementitious Backer Board

1. ANSI A118.9 Standard Cementitious Backer Unit (CBU)

Approved Acoustical Sealant

2. ASTM C920 Standard Specification for Non-hardening Elastomeric Joint Sealant

Warranty

PAC International, LLC. offers a limited lifetime warranty on the PAC RSIM brand of impact sound insulation products against defects in material and workmanship and that the PAC RSIM shall meet all published specifications and perform effectively. PAC International, LLC. warrants that during the warranty period PAC RSIM shall not harden, become brittle, chip, crack, tear, or exhibit any signs of excessive deterioration except for normal wear and tear. All other warranties, including implied warranties for a particular purpose, wear due to ultraviolet degradation, and uses and installations that are contrary to PAC RSIM specifications, recommendations, or instructions are expressly excluded.