

MVT Resistance: A Case Study

The Business Issue

Moisture Vapor Transmission (MVT) ruins stone tile floors, causes problems with ceramic and porcelain adhesion and warps wood. This is often the case in low-lying geographic areas subject to MVT through substrate slabs. It is also a concern where tile is being laid before a building is closed off. Heating and air conditioning the room after the tile is laid changes the dynamics of the slab. Substrates are often subjected to high MVT at various times of the year due to ground water conditions. Multi and high-rise buildings also contribute to MVT problems. Inconsistent HVAC from unit to unit causes vapor movement and flooring failures.

The cost of removing the damaged floor, solving the problem and reinstalling a floor is often quite a bit more than the original cost of the flooring installation.

Moisture wicking up through the substrate can cause discoloration in stone and ceramic tile. Moisture carries salts with it to weaken stone tile and even pit the surface of the tile. A chemical reaction occurs that weakens the mortar bed and can cause debonding, hollow sounding tiles and grout cracks. A platform for mold and mildew may be established under the tile where moisture is trapped. Floor washing equipment and detergents can weaken the already compromised mortar bed. Live loads cause reverberation across the loosened tile. This causes more debonding, grout cracks and even cracks in the tile.

Our Approach

Install a Membrane System over the entire floor to protect against MVT. This System must have a primer that is not subject to re-emulsification with the attack of moisture and/ or chemicals in

the substrate. The System must be a through bond system meaning that while it allows for lateral substrate movement, it maintains a tenacious bond between the substrate and the finished floor. The System should allow for up to 3/8" lateral movement in the substrate. The System should be a direct bond to the substrate with no voids or air spaces underneath for moisture to accumulate. The System should withstand up to 10#/1000SF/24 HRS and remain elastic throughout the life of the building. The System choice is ECB Elastomeric Crack Bridging Membrane, Strataflex Waterproofing Membrane, SAM³ and Super SAM Sound Abatement Membranes.

The Results

Note in the attached photo how this customer chose to use ECB Elastomeric Crack Bridging Membrane as a 36" wide strip application only. You can clearly see there is extreme deterioration everywhere to the tile except where the membrane is applied. Full Floor Coverage of ECB, Strataflex, SAM³ or Super SAM would have kept this new tile floor looking good throughout the life of the building. Without the system, the floor failed, a costly mistake. Our industry must address this issue and plan for Full Floor Coverage to avoid MVT issues. Use quality Membrane Systems and the industry wins.



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