

Moisture Study

A newsletter on moisture-related issues with concrete slabs.

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A floor covering bond-failure is probably the most costly post-construction issue of all.

Moisture

Floor Failure

Bio Hazards

Lawsuits

Down Time

Evaluation

Testing

Prevention

How to Explain “Slab Moisture” to Your Clients

For over 25 years, the topic of “moisture-related flooring failures” caused by damp, alkaline concrete slabs has been quite a provocative discussion around the world.

Americans aren't the only ones who experience massive, costly floor covering failures, it happens anywhere floors are installed over concrete in acclimated environments.

So how does the architect or specifier explain this whole phenomena to a client who isn't familiar with the problem and the need to spend additional sums of money to ensure the floor does not fail? Since a floor failure can be extremely expensive, your client has to clearly understand this risk and that is the theme of this short article.

First of all, lets start with the truth about sealing a concrete slab surface. It is hard work, employs capital equipment, requires skilled labor and needs a viable chemical product to be applied. Anybody who believes there is an inexpensive admixture or spray-on product that doesn't require surface preparation, needs prayer.

In order to seal concrete at the surface, you must first remove the top layer of contaminants, carbonation, curing compounds, hardeners or other debris. That is because any kind of product used to seal the slab must be able to anchor to the concrete. If it anchors to debris, its not going to work.

Cost will be the first thing on your client's mind. Yet the cost they must be thinking about is that of a failure, not the fix. In my 20 years of experience with owners, this approach to the problem seems to help. Here are the bullet points:

Phase 1 - Give them some background to this problem.

1. All concrete is made with water that must evaporate over time in order for a floor covering to be safely installed. No contractor can make drying occur faster than nature allows, at least not significantly enough to be free of the risk of failure.

2. Failure of a floor is when the evaporation rate of the slab exceeds the dissipation rate of the floor. Vapor condenses into liquid and becomes highly alkaline. A failure is a chemical process, brought about by moisture. It is a physics issue, yet misunderstanding it turns it into an emotional one.

3. This is a huge industry problem, has been known for over 50 years, with the last 25 years seeing billions lost due to ignorance on both the awareness level, and on the method of fixing it. The term that defines it best is Caveat Emptor.

4. As long as concrete and floors are used together, nobody is immune. Even the largest firms and clients have had floor problems after taking occupancy of new buildings. Don't let your client believe “this won't happen to me”. This happens to many.

Phase 2 - Give them the worst case scenario, for it may be.

1. If the floor fails, it results in bubbles and blisters in vinyl and rubber flooring, loose carpet tiles, slip and trip hazards and overall aesthetic and performance loss. In some cases mold and bacteria growth can present an indoor air quality risk.

2. To fix a failed floor, everything on the floor and in the room must be evacuated. Capital equipment is brought in to prep the slab, making noise. While good equipment minimizes dust, there is that aspect as well. It may take 5 days to redo, and it costs far more in material and labor to fix than to prevent in the first place.

3. Divide the total down-time costs (plus R&R costs) by the square footage of the room. This is a real number that will make any cost to seal the slab a wise investment.

Phase 3- Give them the truth.

1. The owner drives the completion date. If that date does not allow time for the slab to dry, the only option is to seal the floor. Shifting burden onto contractors to correct something they cannot is not the answer. It only leaves their facility at risk.

2. Do not let the owner risk their own project by shopping for some kind of solution that looks good in literature and seems to be very inexpensive compare to the competition. If there was an easy solution, you wouldn't need this information and your E&O exposure wouldn't depend on how you address it.

Phase 4- Give them hope.

1. The first thing to do is specify a tight water/cement ratio mix and ensure a proper under slab barrier. If the slab can be water cured, absolutely do that. All this is the first line of defense.

2. Set aside funds as an add-alternate or a contingency. Then at the time of flooring, run the moisture tests and only install the sealer if it is needed and where it is needed. Not every square foot is at risk. A program of evaluation saves your client money as well as to ensure problem areas are no longer at risk for bond-failure.

3. Assure them you practice due diligence and have researched the product claims and warranties, then specified proven solutions to moisture. For more information please refer our web pages.