CFR The Commercial Flooring Report
For the Commercial Floor Covering Industry
Volume 186 - March 2024
Click here to View and Download all CFR Newsletters

Fixing Moisture Related Flooring Failures and Some More Absurd Statements

There is all manner of moisture treatments before the flooring is installed – from the top down, the bottom up and in between – that will hopefully prevent a concrete moisture related failure. But what do you do if you have a failure, and nothing has been used? How do you fix it and keep it from happening again?

This is an issue rarely talked about - how do you fix the failure - after you've determined the cause. And the cause could be one individual event, like moisture emanating from within the concrete or water hydrating the concrete from an outside source, laterally or from beneath the slab or the failure of something that was meant to prevent moisture related failures that didn't work.

Since what we do is look at flooring failures of all kinds, from concrete to carpet and everything in between, with experts in each category with decades of experience, we also must know what went wrong and why, who or what is at fault and how to fix it.

With flooring failures related to moisture being so pervasive on very large commercial projects, the need for fixing and preventing another failure was obvious. Our clients needed help and a fix, and our job is to make that happen. As a result, we partnered with HB Fuller to develop a unique product that could be used effectively to remediate the problem and prevent it from happening again. We'll get back to this shortly.

First you must determine what caused the flooring and installation failure. Most often it's a concrete issue but in addition that could be exacerbated by other influences. The down spouts of the building may be emptying at the base of the slab. The grading could be pitched toward the building instead of away from it. The irrigation system used may be hydrating the slab. The membrane used beneath the slab may have been placed under the fill and not up against the poured concrete. The membrane may not be wrapped up the sides of the slab, it may have been breached or work done after the slab was placed damaged it, and a myriad of other things could be going on. When looking at a commercial flooring failure of any kind you can't just look at the flooring, you must look into it, and furthermore get a background of everything that took place when it was installed, and you have to know how to ask the right questions. And you must understand the products involved, the people and the dynamics (a force that stimulates change or progress within a system or process) of each situation. Every factor must be

considered, understood and you must see what was done, by who, why and how – only then can you get an answer. That is not to say that sometimes the problem is staring you in the face and easily determined, if you know what you're looking at. As we always say, "the evidence never lies, people lie, but not the evidence." On top of that you must have the experience, and lots of it in the industry and in particular, the commercial flooring arena.

So, getting back to answering the question of what can you use to fix the failure that will work once any other influencer is corrected. We worked with HB Fuller to develop a unique product that would prevent the reoccurrence of a moisture failure. It took a while to develop and is a hybrid of an already existing moisture mitigating technology. It had to be effective, easy to apply and work with, and fairly priced. That product is ***System 2 MVB (Moisture Vapor Barrier)*** and it was developed solely as a fix for moisture related failures. This product is not available on the open market or from HB Fuller. It was not meant to compete with any other products on the market as it is to be used for a very specific niche. To date, there has never been a failure of the system and the substrates it's been used on that you could almost do the back stroke on – they were water wet. If you're interested in knowing more about this product and where you can get it, (not from HB Fuller), contact us (LGM) and we'll get you in touch with the supplier, and the supplier is not LGM. By the way, this system has a real warranty, and a technical represenative can be on site to show your crews how to use it.

Moisture caused flooring failure. So much moisture that the adhesive is oozing out between the edges of the carpet tiles like lava from a volcano. This is the job mentioned that we developed a fix for.

THE COMMERCIAL FLOORING REPORT

Lewis G. Migliore—President

P: 706.370.5888 or Email: lgmtcs@optilink.us

Just Click Here to Go to Our Website for All CFR Articles

LGMANDASSOCIATES.COM

What flooring products are available to you to prevent moisture related failures?

Nothing in hard surface but in carpet tile you have several options. These are all products with fleece backings or that will breathe that don't have to be glued down or if so, you can use System 2 first for any moisture concerns.

Whose carpet tile products will work as alluded to above: Mohawk, Milliken, Shaw, Bentley, Engineered Floors, Masland, Interface and J&J Kinetex or any carpet tile with a fleece backing that can breathe. However, the fleece backing may only be one of the components to be employed depending on the circumstances of each project, and every project and substrate is different. We developed a system 10 years ago that solved a $1.2 million failure using one of these products, with a pre-applied adhesive and a topical moisture mitigation that solved the problem – after the outside influencers were corrected.

Can the flooring material being installed live in the hostile environment of moisture survive? Yes, it can if you know the substrate, what's in it, what inside or outside influences may compromise your installation, if the substrate is properly prepared and if you use the appropriate products. In fact, every flooring failure we see could have been prevented if the right products had been used.

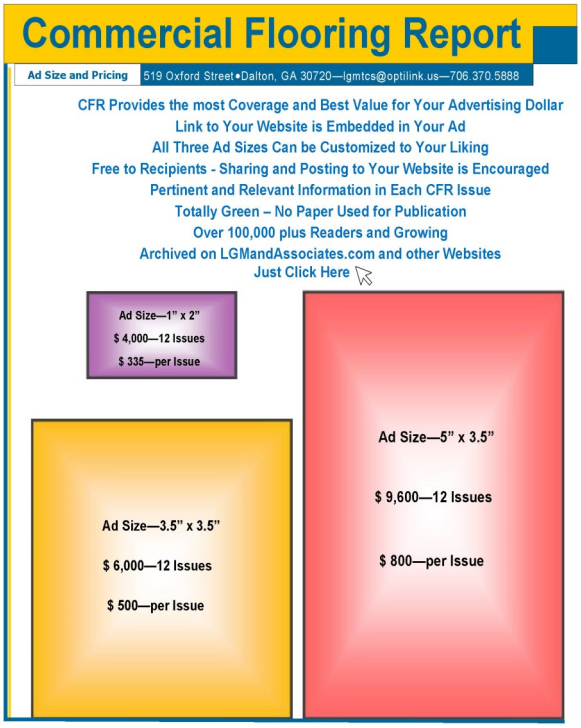
Now for some more ridiculous statements that we've heard to share with you. I couldn't help myself from sharing these with you so that I wouldn't explode.

Statement from a flooring manufacturer about their product—"Our production material is well within our acceptable tolerance. We think we have done an exceedingly good job in producing this material." In fact, the product failed the lab test miserably and the difference in the produced product from the sample could be seen by anyone other than them looking at it.

From another manufacturer, "We need more information." What! The product you sent for installation on this project doesn't meet your written specification, it doesn't fit together, it's near impossible to install, it's defective and proven to be – what more do you want!? This stuff was screaming defective.

A legal statement relative to negligent design of a product that failed: "It was a flooring that was not free of defects within generally accepted standards in the industry and not of merchantable quality." This is an important term because,

Click Photo to view the LGM website.



Click Photo to view the Archived CFR's.

despite what someone may say, the law looks at the issue differently and this is one of those ways.

More absurd stuff—This from a statement on vinyl plank flooring lifting in a commercial installation: "Adhesive causes lifting of vinyl plank floor." NO, it does not. Show me the proof. Especially when you have two products from the same manufacturer installed on the same substrate, by the same installers, with the same adhesive under the same conditions and only one is lifting.

This from a recently proposed specification—Cushion under carpet tile – never! Either order the carpet tile with an attached cushion backing or install it directly to the substrate without one. But you can't put cushion under carpet tile and expect it to perform or the installation to work. Not going to happen. And why would you want too anyway?

A belief that has no merit—A slight unlevel in the substrate does not cause all the vinyl planks to cup uniformly – that is a product problem. We see this and hear this all the time that the unlevel substrate will cause the vinyl planks, every one of them, to cup or lift uniformly. Think about this for a minute. Does it make any sense to you?

Another floating LVP caused failure called in by a frustrated consumer: We get them from time to time when they have nowhere else to turn.

"One of the major reasons we decided on this product was we were told by the manufacturer (the entire industry) and the contractor that we can lay out these planks over existing flooring (including hardwood). Now after three years, we discovered that the entire flooring underneath is covered with black mold. I suspect because moisture was trapped underneath between the LVP floor and the hardwood and because LVP doesn't breathe, it left moisture to fester." And he is correct. We have gone off the deep end with making statements and promises about these products that are beyond reality.

On a hospitality installation we worked on, the installers said the carpet was defective because they couldn't match the pattern at the seams, but they had none of the right tools to install. No power stretcher, straight line, crab, or deadman. The comment was also made that seam sealer wasn't used because it gunk's up the iron and seam.

And a comment on adhesive—Adhesives are not moisture mitigating systems. The ratings for adhesive resisting failure are often at 99% but just what does that mean? Even if the adhesive withstands volumes of moisture emanating from the concrete and the alkalinity it brings with it, they will not prevent an installation failure due to moisture. Let's explain how and why. Moisture can pass through the adhesive so the adhesive may be able to withstand compromise from moisture but the flooring, most often today non-permeable vinyl plank or tile or some derivative of it, will stop the moisture vapor, which is actually what's coming out of the concrete, the moisture vapor transforms into liquid water, which moisture vapor does when it condenses, and the bond from the flooring to the adhesive fails. This may not mean the adhesive failed but the bond did. You may have to try and visualize this in your mind. Eventually, however, the moisture and alkalinity from the substrate may overwhelm the adhesive causing it to emulsify. Remember what we've always said here. Everything works until it doesn't and nothing in flooring works all the time, nor is it immune from failure. Science trumps everything.

And More on Moisture—Larry Press is an expert in floor covering issues and the Standards that surround them, Past Chair ASTM F06 Resilient Flooring, Honored as Award of Merit recipient ASTM Fellow, Head of Delegation ISO Tag 219 Floor Covering, Expertise includes installation, manufacturing, Standard development, claim/ problem identification & remediation, specialty in resilient flooring and adhesives, subfloor preparation, moisture concerns and testing.

This is an article, verbatim, Larry wrote recently that was posted on LinkedIn

“In CSI's Dec 1992 issue an article was penned by Thomas Butt, "Avoiding and Repairing Moisture Problems in Slabs on Grade", written, with the assistance of the members of the RFCI (reluctantly) and others. In general, it was based on research and information available at the time, initially put together for a project for which Mr Butt was commissioned. This article became the foundation in the ASTM E06 Building Committee for Standard E1907, as well as initiating the development of moisture Standards, leading to "F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" within ASTM Committee F06 on Resilient Flooring. After 6 years of going back and forth between the 2 committees the F06 Standard was finally approved as a "Standard Test Method" in 1998, additionally, with F2170 Relative humidity in situ published July 2002.

Since then additional "Practices, Guides, Test Methods" etc, specific to moisture have been approved with continued revisions, ex. F2170 the most notable. Twenty Six years later, moisture still retains its top spot in the F06 Committee, with what seems to be continued issues, that with all the revisions, re-definitions, and "marketing" terminology, these Standards have yet to be totally resolved as far as the answer in identifying a future moisture failure. To date, no testing specific to moisture, can predict a flooring failure or show that one size fits all, especially as far as the ASTM test methods, practices or guides currently available. No matter what those warranting a product would have you to believe, moisture still continues to plague the industry in one form or another financially. For those who take issue with what's written, show where "bench mark ruggedness testing" of a resilient material over time has been accomplished, and whether any correlation to Rh and future failure is identified specifically guided by the results of F2170 or for that matter any other moisture Standard. To the user, understanding what information the "Standards" are actually capable of is essential in safeguarding a successful flooring installation.”

This is a statement shared with us recently that I love. “If you are not a scientist, and you disagree with scientists about science, it’s actually not a disagreement. You’re just wrong. Science is not truth. Science is finding the truth. When science changes its opinion, it didn’t lie to you. It learned more. “Unknown”

FCEF exists to bring awareness to the opportunities in a flooring installation career, recruit new talent, aid in the funding of the their education, and facilitate job placement into flooring industry careers.

Here is a link to ALL of the FCEF Digital Marketing assets. We provide all of this to retailers for free so that can promote the career and the scholarships in their neighborhood and with their network.

At this link, you will find, complete social ads ready to be customized and posted, email templates, customizable fliers, social video ads. Feel free to use any of the copy you see there – and download anything you like.

FCEF
FLOOR COVERING EDUCATION FOUNDATION

Take Advantage of this!

Are you confused by all the changes occurring in the industry? Is the onslaught of new flooring products, soft and hard, adhesives, site related conditions as well as substrate issues, overwhelming you? Do you want to stay out of trouble and avoid a flooring failure? Let us help. We can come to your business with an educational program that addresses all these issues, and more. Afterwards we can engage you and your team in a question and answer session that is sure to help clear the cobwebs of chaos.

Call or email us to discuss your interest and for more details.
706-370-5888—lgmtcs@optilink.us