

CFR THE COMMERCIAL FLOORING REPORT

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CONDITIONS OF THE SPACE

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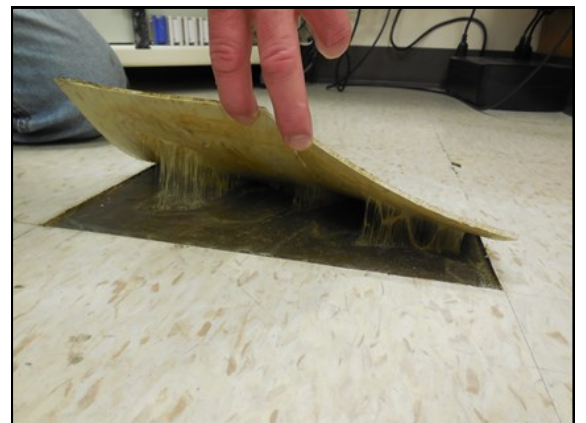


Come see me and hear this excellent presentation at The International Surface Event TISE 2017—Make sure you register for my presentation: A Look At The Latest Flooring Failures and Case Studies – see actual cases we’ve worked on over the last year. Thursday, January 19th 3:45 to 5:15—I’ll look forward to seeing you there. Also, Peter Craig will be hosting a seminar at the World of Concrete. See page 5 for details. Thanks, Lew

The conditions of the space where flooring is to be installed are increasingly ignored based on the number of claims, complaints and flooring failures we’re seeing around the country. Of major importance is the fact that the space in which the flooring material is to be installed be conditioned as if it was occupied by those who will populate it. The Heating, Ventilating and Air Conditioning Systems (HVAC) must be operational for two reasons. First, to properly conduct any moisture testing being done, whether calcium chloride or relative humidity and second, to acclimate the flooring material regardless of what it is from carpet to wood to vinyl and everything that goes on the floor.

ALL flooring materials react to heat and cold and most to humidity. Most critical is wood flooring since it is the most sensitive to the conditions. This also goes for the adhesives used to install the flooring materials. If the substrate for example is less than 55 degrees the chances of bonding anything to it, despite any other compromising conditions which may exist, are greatly diminished. Temperatures exceeding 85 degrees can also compromise the adhesive and adhesion of flooring materials depending on substrate conditions. This goes for adhesive which may be sprayed on, troweled on or peel and stick types.

The substrate conditions are important as well. Certainly any residual materials which can compromise adhesives such as oil, grease, dust, dirt, chemical contaminants, moisture and alkalinity or cleaning agents and paints will thwart adhesion but they can also have an effect on discoloring or distorting vinyl flooring materials be they sheet goods, planks or tiles and may affect PVC or synthetic carpet backings. Contaminants on the substrate can migrate into vinyl flooring and appear on or beneath the surface. They can also react with the vinyl material



backing creating installation and material failure. Another factor not often considered is the porous condition of substrates or the “open” condition of a concrete substrate surface on any floor of a building. If the concrete is porous or has any ability to absorb moisture from an adhesive, particularly an adhesive that has a water base which most SBR Latex (Styrene Butadiene Rubber) adhesives do. The very act of installation can cause a failure of adhesive bonding to the substrate. The reason is the water in the adhesive will naturally penetrate into the concrete and it must volatilize or evaporate as it dries and cures. In doing so the moisture which went into the concrete now comes out and with it comes alkalinity – an integral and natural component of the concrete. Alkalinity is the component in the concrete that affects adhesive by destroying the tackifier – the sticky stuff. When this happens the adhesive begins to breakdown, dry out and what’s left is a beige colored, powdery material – the filler in the adhesive – which won’t stick to anything. This breakdown will take time to occur but occur it will. The cheaper the adhesive the more water it contains. The more expensive the less water and more solids - the good stuff - it contains. So it behooves you to use the higher quality, higher solids adhesive so it will stick better and last longer. Even under adverse conditions a better adhesive could last long enough to reach a weak point as a broadloom carpet, particularly, reaches the end of its life.

With construction schedules being turbo charged to speed completion, more and more we see flooring being installed before the building is closed in. Recently we’ve had a wood floor installation start before the windows were installed and these were floor to ceiling windows, so the space was essentially open to the winds. On another project the flooring contractor was going to test the concrete with no conditioning in the space which also can’t be done. These examples are cart before the horse thinking and it’s not the flooring contractor making the decisions to do this. The GC or owner is cracking the whip to move the project along so the deadlines can be met but at the expense of having to face imminent flooring installation and product failures only to have to fix things after the project is completed. I can’t understand this thinking as it is counterproductive and just plain stupid. I’ve said this before, how is it you have time and money to fix things later but not enough time with no extra money spent to do things correctly first? I guess we can say time is money, so getting the space finished so it produces whatever business is to be conducted in it will get the meter running, even if the revenue being produced gets siphoned off to fix the flooring problems caused by rushing - a decision that’s definitely contrary to “Do it right the first time.”



THE COMMERCIAL FLOORING REPORT
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Page Layout By: Anita S. Drennon

All flooring manufacturers have in their product installation specifications and guidelines the conditions necessary for a successful installation as do adhesive manufacturers, except for the temperature of the substrate which is not the temperature of the space. These guidelines are not written to waste paper or space on a computer screen but to insure the proper conditions to protect the integrity of the flooring product itself and the integrity of the installation. The architect or specifier must be sure to write the conditions of the space into the Division 9 spec (<http://lgmandassociates.com/wp-content/uploads/2015-11-CFR-Volume-86-Construction-Specifications-Division-3-and-9-November-2015.pdf>)

so the flooring materials are protected from unsuitable environmental conditions. If the spec calls for space conditions the chances of them being appropriate are far better than if it never gets mentioned and has to be argued later. There should be no thought of starting a flooring installation before the space is conditioned. Having said this we also have to consider the consistency of space conditions after the installation. Most notably is the operation of the HVAC system which is almost always programmed to fluctuate over a schedule of night, day and weekend operation to save energy and money. This fluctuation will definitely affect flooring materials and their installation and its most often not even a thought.

An example of a problem would be wood flooring expanding and contracting with the fluctuations of temperature and humidity in a space and then the blame being placed on the flooring material or the installation, neither of which have anything to do with the changes in the wood. The wood is doing what wood does; reacting to the changes in the environment – the same as it does in the forest. And another product, broadloom carpet, especially if the substrate was porous and the adhesive is starting to lose its grip, will react to fluctuating environmental conditions which cause nylon to gain and lose moisture and the synthetic backing to react to changes in temperature – both creating expansion and contraction of the material. While it's fluctuating and causing stress in the material, the carpet is moving and along with a failing adhesive, releasing itself from being stuck to the floor thus we see buckles and wrinkles in the carpet. Again, the carpet and installation get blamed for this condition.

Remember, “The flooring never lies; it will always tell you what’s wrong if you know how to interpret what its saying”.

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There are always clues to the failure not all of them obvious so some sleuthing has to be conducted to find out the history of events but it's always a cause and effect scenario. This is often chemistry and physics at work.

So how do you prevent flooring failures from occurring when the space is not conditioned? Well first, obviously, is to never install flooring materials of any kind, including floor prep materials, until the HVAC system is operating and the space is conditioned. Always follow the manufacturer's installation guidelines for all the materials being used whether you want to or not. If you don't and a failure occurs and you didn't acclimate the material or use the appropriate accessories, the money you lose will be yours.

Since everyone is conscious of saving energy and money you're likely going to see more flooring failures occurring due to conditions of the space and thinking something is wrong with the product as opposed to the space conditions being at fault. As with so many flooring issues we see you have to look not only at the flooring but everything else which may be contributing to the problem. The flooring will exhibit the result of conditions but it may not be the reason it's doing what it shows.

If you have questions, need help before or after on a project, and need definite answers, contact us. We can always determine the cause, effect and come up with a solution to your questions or problems.

Have a very Merry Christmas and a Happy, Healthy and Prosperous New Year.



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Tuesday, January 17, 2017 - 8:00 AM - 11:00 AM



Wednesday, January 18, 2017 - 3:45 PM - 5:15 PM

Your Presenters & Cast



Peter Craig - Concrete Constructives
as your host and Sherlock Holmes



Scott Tarr - North S Tarr Concrete Consultants
as Albert Einstein



William Thornton -Tarkett Sports
as judge Thornton Justice



Roland Vierra-Flooring Forensics
as attorney Roland Questionhauser



William Lepito -CFCC
as attorney William Rebutski



Robert Lucas-Floor-In-Spec
as the flooring installer



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