

## **Do You Know What's in the Flooring?**

All of us in this industry work with and look at flooring on a daily basis. Did you ever wonder what it's made of and what goes into it to make it? We're talking about a product that employs physics and chemistry, not only in the flooring product itself, but in all the products that are associated with it. These would include floor prep and treatment products, adhesives, sealers, cleaners, the substrates the products go on or anything else you can think of. All chemistry. How do these chemicals interact with each other or within the product itself is one of the things we'll touch on as well as some other interesting stuff we get involved with.

How is the end user, the flooring contractor, installer, architect, specifier or the seller for that matter, if they're not

making the product, supposed to know whether the product is

what it is said to be? How can they know if something that they can't see is or isn't really there without sophisticated laboratory testing?

In listening to a Steve Jobs interview on how you learn to run a business, he made the statement about how most businesses operate, "because that's the way it's always been done." They guess and adjust. It is sometimes that way in the flooring industry. After being in the industry for 54 years, growing up with it here in Dalton, and being mentored by the industry, I've often said that the introduction of new products is done by the "shoot, ready, aim principal." Let's get the product into the market and we'll make the adjustments afterwards. As Steve Jobs said, they guess and adjust. Even with the most fabled product in the industry, Stainmaster, this was done. The product was turning yellow on the racks in mills due to the stain resist treatment reaction – phenolic yellowing. And the EPA almost shut the industry down due to the effluent being dumped into the water handling system of Dalton. With new product introductions, in every industry, adjustments are made to the products when and after they hit the market. In the case of the flooring industry new product introductions that fail to perform or exhibit questionable conditions when installed, turn into complaints and claims for which the flooring installers and flooring contractors get blamed. When you live, eat, sleep and breathe this stuff you understand how the system works. And you can't do that without living in the heart of the flooring industry.



SHEET VINYL—EFFECTS ON ADHESIVE FROM PLASTICIZER MIGRATION

The most popular products today are vinyl planks and tile. The vinyl is PVC, polyvinylchloride, a thermo plastic polymer, relatively inexpensive and used in all kinds of product applications. Remember the movie The Graduate when Mr. McGuire takes Ben aside and tells him, "I just want to say one word to you, Plastics." "There's a great future in plastics." He wasn't lying as the flooring industry has found out with the deluge of plastic floors on the market. But, what's in those plastic floors? All kinds of things that you can't tell by looking at them because they're all hidden out of plain sight being contained in the product. We have layers of various materials in flexible flooring, all kinds of fillers in rigid core flooring so much so that you can't say all these products are the same, because they are not.

What is PVC free and what's in it – In the flooring industry, PVC-free usually refers to a new technology of polyolefin or urethane-based products. These products do not contain phthalates but alternatives to them. Some of the alternative, the jury is still out on.

Let's look at some statements from a sell sheet made about PVC free flooring that contains no phthalates. Our plasticizers do not contain Phthalates. However, we do use post consumer recycled product in our flooring and there may be trace amounts of Phthalate in that recycled material. This is one example of PVC free product with no ortho phthalates but at the very bottom of the sell sheet makes the statement that the product contains recycled materials that contain ortho phthalates, what?!! So, it really isn't phthalate free.

PVC free flooring products will also require new installation techniques and adhesives. And with some of these products we're just pi..ing in the wind – who knows what problems they're going to present.

In another marketing piece for LVP plank with a Fiberglas stabilizer that can be installed with no acclimation or operating HVAC. But in the spec sheet the ASTM F2199 test for dimensional stability is said to be pending. How can you make a marketing statement that you haven't even proven what you're claiming?

What effect can pre or post manufacturing recycled content have? We've mentioned this before but the addition of recycled content in flooring materials can create problems. You can only recycle your own in-house scrap from manufacturing so many times before it can compromise the integrity of the finished product. That compromise may not show up until the product is in the market and exposes some hinky characteristics that weren't counted on, expected, or the cause realized.



## THE COMMERCIAL FLOORING REPORT

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**Commercial Flooring Report** 

Poured rubber flooring, especially from the 1960s to the mid-1990s, in school gymnasiums, cafeterias, and other areas. These floors, particularly those with a resilient, rubber-like, water-resistant appearance, may contain mercury, which was used as a catalyst in the manufacturing process.

Exposure to mercury vapor, even at low levels, can pose health risks which is why this type of old flooring should be removed by firms specializing in its removal. Exposure to mercury is deadly. We just had a client consult us about old rubber flooring in a gym they were going to be replacing. We advised them to contact a licensed abatement company to remove the old rubber flooring before they did anything else.

We were recently involved with some testing done at the lab where vinyl planks were subjected to water with a high pH content. The vinyl planks reacted violently. This is an indication volatizing moisture from concrete substrates, which always contains high pH, because concrete is a high pH material, can cause reactions with the vinyl flooring. That would not be a product problem, but a problem created by the conditions on which the flooring was installed on. Everyone likes to tout moisture resistant everything, but how about the alkalinity, which comes hand in hand with concrete moisture, it can potentially create all kinds of havoc with adhesive, topical coatings and the flooring material.



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Flooring containing a magnesium oxide core can also be susceptible to reactions of moisture. Testing conducted revealed "pimples" formed in the surface of the flooring from exposure to moisture. Guess who would get blamed for this initially? If you guessed the flooring installer or flooring contractor, you'd be correct.

The rigid core products, that are floating installations, which we are never in favor of being installed in a commercial environment because the engagements systems can break and fail from flexing, will get you blamed for an installation failure. There is no industry standard for how strong the connecting system must be and no ASTM test for it.

More on rigid core products; the cores, if SPC, can vary greatly with a coarse or fine grind changing the characteristics of the product. And these cores can react to moisture. Don't think that stone doesn't absorb water, it does, and it will when it's pulverized.

A lot of this falls under the heading of "The shoot, ready, aim principle of product introduction." See the second paragraph for the explanation again.

Now let's talk about new concrete. Changing faster than even the concrete industry can keep up with. New and varied chemical additives. Victoria University researchers are testing a sustainable concrete mix using shredded high-visibility vests and cardboard. There is more fly ash being used, additions of titanium and ground up glass, fibers and higher alkalinity additives and changes in water content. And old concrete may contain aggregate that itself holds water and other substances that may not only compromise the flooring installation but the concrete substrate itself. And concrete is a regional product so it's different in every area of the country. We always say that every load of concrete is different on every job.

For what some think is a very simple industry you can see there are a multitude of complexities, and it's ever changing. Like everything else today, change is happening quickly and with everything everywhere. Why should the flooring industry be any different?

At LGM we must keep up with the changes to be able to render a viable service to our clients and to create value for you.

If you need help or guidance on a flooring issue, of any kind, contact us. We can help you. When no one has the answers, we do – always.

If you need help, have a question, aren't sure of a situation you're in, want to avoid a problem, or need guidance on a project or product, contact us. We always have the answers, always. It's what we do, from the substrate to what goes on it.



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