

Before we talk about what's in an architectural specification you should know what an architectural specification is. According to the Dictionary of Architecture & Construction a specification is, "a written document describing in detail the scope of work, materials to be used, methods of installation, and quality of workmanship for a parcel of work to be placed under contract; usually utilized in conjunction with working (contract) drawings in building construction." Furthermore, according to The Construction Specifier, "specification sections are customized in order to accurately describe the intended materials, and then these sections are used by the team to identify the type of products that should be used onsite." Construction specifications are prepared before construction begins, in the design phase as part of the contract documents. Although their structure varies project-by-project, typically they reflect packages to be given to subcontractors from contractors. The information in the spec should be clear and detailed. The more specific the specification is, the better. But the information contained in the specification must be correct and coordinate with the design drawings.

Most everything you need to know or do on a project is going to be described in either Division 3 which deals with the concrete and substrates or Division 9 which deals with interior finishes. Furthermore, according to The Construction Specifier, "specification sections are customized in order to accurately describe the intended materials, and then these sections are used by the team to identify the type of products that should be used onsite." I'm repeating this information, and quotation, because this is where the problems arise in construction specifications. The information on the products to be used are not always correct, nor is the explanation of them clear, or is the way they are supposed to be used the same as what the manufacturer of the product specifies.

Working on large commercial flooring failures and projects is not just about physically inspecting the flooring where it's installed to determine what went wrong and why. It involves much more than that, especially when the liability at stake is six or seven figures. It often includes interviewing the parties involved in the problem and reviewing the architect's specifications for the project. Where concrete is concerned, you must look at the mix design, the additives, the batch tickets of each of the truckloads of concrete, where in the country the concrete materials and components come from, and more. This is something we do regularly, and one of the reasons LGM is so unique in what it does and in our capabilities. We get answers, and we know where and how to look for them, and we have a team of experts in each category we work in that know and don't assume or guess.

We'll site some recent cases that point this out, but first I want to share with you some statements made by an architect/engineer friend I made on a recent project. This case involved a flooring failure with a product that turned out to be defective, but the product specified was also not suited for the application which was another reason it failed.

Following are his comments to me about what an architect, engineer and general contractor are.

"An architect is a person who knows a little bit about a great many things. During the course of his career, he continues to learn less and less about more and more, until he knows nothing about everything.

An Engineer however knows a great deal about a very few things. But during the course of his career, he continues to learn more and more about less and less, until he knows absolutely everything about nothing.

Contractors on the other hand are very intelligent, knowing absolutely everything about everything. But due to their continual association with architects and engineers, they end up knowing nothing about nothing."

Each of the three entities just mentioned, most commercial flooring contractors and installers interface with on a regular basis, especially on new construction projects. How many times have we asked the question when showing up at a project to look at a problem and said, "so what made you think this was going to work?" The information provided in the architect's specifications on commercial flooring projects, found in Division 3, dealing with the concrete, and Division 9, dealing with the flooring can be incorrect or misleading. We find outdated information, mistakes, and contradictions in the specs all the time.

We recently were involved in a major flooring failure in two new schools that would have cost the flooring contractor well into six figures if he was found at fault. The hard surface flooring on both schools was failing due to moisture from the slab emulsifying the adhesive and causing it to ooze from the edges of the tile. This problem occurred within four months of the flooring being installed. The general contractor was blaming the installation contractor thinking moisture from the adhesive he used was the cause of the problem. Of course, this was not the case, and it was almost comical that this was thought to be the problem. After looking at both installations and seeing what the problem was, I asked if a moisture vapor barrier was placed beneath the concrete and if it was wrapped up the sides and sealed. I was told it was.



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I also asked to see the architect's specifications for the moisture barrier product used and its placement. When we had a meeting with the flooring contractor, the general contractor, and the concrete contractor, it turns out that there was a drawing for the moisture vapor barrier placement. The moisture vapor barrier was placed beneath granular fill and not up against the bottom of the concrete as it should be. We were also provided pictures of the moisture vapor barrier placement and saw that it was misplaced and not wrapped up the sides of the concrete. The things that were said to be done weren't, and the barrier was specified and installed wrong. The manufacturer of the moisture vapor barrier that was installed incorrectly, has a video on their website clearly showing how their product is to be placed and used. Apparently, the architect or one of their interns, never bothered to look at this. There was irrefutable proof and blatant evidence exonerating the flooring contractor. The flooring failure had nothing to do with him.

On another project the architect specified luxury vinyl plank to be installed over a crumb rubber underlayment. These two materials are incompatible with each other. The installation failed and resulted in a lawsuit for well over a million dollars. The architect was found at fault, and it cost them well into the high six figures. In this case we wrote a paper on the incompatibility of PVC (the vinyl flooring) and SBR (the crumb rubber underlayment) to prove this. These two products should never come in contact with one another. There are now some vinyl flooring manufacturers who have this information in their installation guidelines – it should be in all manufacturers' installation information.

In another case, in a new multi-story office building, floating vinyl plank flooring was specified to be installed. All the vinyl planks were cupping on every floor. The product out of the box also exhibited cupping. The flooring was blatantly defective. This type of product should never have been installed in a commercial application. Only glue down products should be used on a commercial flooring project. Before the building was ever occupied the flooring had failed. This was a specification issue, also the fault of the architect.

And in yet another case, a flooring system to mitigate a moisture and water issue with a concrete slab below grade was specified that included a dimpled underlayment, a cementitious leveling material to be installed over that, then a wood substrate and then a direct glue



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This diagram shows where the moisture vapor barrier/retarder must be placed, directly under the concrete, to be effective. down carpet. This was an accident waiting to happen. You can't apply a rigid cementitious leveling material over an underlayment that flexes. Common sense alone should tell you that. This whole system, specified by the architect, defies logic. It was never going to allow a successful and trouble free carpet installation but common sense ain't so common these days. Fortunately, we were asked to get involved to help resolve this dilemma.

In any of these matters the law looks at them from a different perspective than we do relative to what went wrong, why, who's at fault and how do you fix it? Legally it has to be proven that whoever is responsible, such as the architect or GC, that they did something wrong. This can become a more complex matter, but we do get involved here as well. The term "ignorance is no excuse for the law" comes into play as you just can't say you didn't know. In each of your areas of expertise, and whoever the entity is, what you should know is paramount. You can't just claim you didn't know when you, as the professional, and this being your job, are relied upon to know. This is where the boondoggle starts to get unraveled. (Boondoggle, for those of you that don't know, is braided and knotted colorful strands of plastic and leather. You can Google the name and see what this stuff is.) Moving along.....



Failed installation due to crumb rubber underlayment (SBR) being used with vinyl plank flooring (PVC)

Floating vinyl plank flooring installed in an office building. The flooring is cupping and doing so on all 20 floors of the building.

**Spec-Intel**—is a company that you should be aware of to help you stay out of trouble with specifications and make your jobs less problematic. New software makes specifications better, more clear, concise and correct. Spec-Intel continuously manages the largest product database in the industry, complete with all technical documents. Spec Intel will search and download all documents, including the architect's specifications, and eliminate errors. All commercial construction begins with product data. However, after years of reviewing over 2,000 finish schedules, on average, every finish schedule has 30% poor product data. Bad data in the commercial construction industry accounts for over \$60 Billion in unnecessary spending attributed to re-work annually. Over \$31 Billion of annual re-work in the U.S. is caused by poor data and miscommunication. This equates to 14+ hours lost per person per week ranging from lost information, conflict resolution, and rework from mistakes. Flooring contractors that do not validate every product specification contribute to these mammoth numbers in lost revenue. By comparison and contrast, this technology platform provides accurate product data and saves over 84% of the time wasted compared to the same manual processes. This software company also integrates vertically to automate sample ordering, pricing, and all technical documents from submittals to closeouts. I just became aware of this technology and found it fascinating because it resolves the issues with specifications that are incorrect, outdated, or inconsistent. <u>https://www.spec-intel.com/</u>

With large commercial flooring problems, complaints, failures and claims you have to do more than just look at the job. You must know where else to look, how, know what you're looking for, and then understand what you're looking at to determine the problem. People will spew all kinds of words to justify their position or defend themselves, but words are just that, words. They aren't fact and they often aren't the truth. The truth is often hidden somewhere in all the documents. Our job is to find the truth.

If you have a question a problem or want to avoid having a problem on any flooring material from concrete to carpet and everything in between, contact us. It's what we do every day, everywhere, with all these products, and LGM is the best there is at it. By the way, we can also test all these products.

A comment from one of our readers:

"As a contractor, reading your latest article is like a breath of fresh air. By now I learned where to turn when I need an honest and professional opinion."

#### Sharing this story which was also from our architect/engineer friend.

We have this guy in a hot air balloon drifting over the countryside. He had decided not to pack his maps, opting to bring his iPad instead. Unfortunately, having stepped on it in the small basket, it is now use-less. Pulling out his cell phone, he slipped and accidently dropped that over the side of the basket. Not seeing the chase car anywhere, or any landmarks he recognizes, he starts to get worried about a meeting he was supposed to attend.

With the clouds starting to gather and darken he becomes more concerned. He spots a man walking along a country road beside a large open field. Bringing the balloon down to within earshot, he yells to the man "excuse me, I'm not sure where I am, nor am I sure what time it is, and afraid I may be late for a meeting. Can you tell me where I am?"

The man on the ground pauses, looks up at the man in the balloon, and says "you are in a balloon".

The man in the balloon, taken a little bit aback, thinks for moment and asks, "are you by chance a contractor?"

The man on the ground answers "yes, just so happens I am a contractor. How did you know?"

The man in the balloon replies "even though the answer you gave me is 100% correct, it has done nothing to help my situation, as I still don't know where I am, what time it is, and where my friends are. You have been absolutely no help to me, and now I am going to be late for my meeting."

The guy on the ground looks up and the man in the balloon and asks, "Are you by chance an architect?"

The man in the balloon looks down and replies "yes, just so happens I am an architect. How did you know?'

The man on the ground answers "you are completely lost and out of your element, don't even know what time it is, didn't properly prepare for your outing by checking the weather forecast with the cold front and thunderstorm approaching, nor schedule your time properly, or let anybody else know what you were doing. And now you are trying to pretend it's my fault".



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