

Seriously, you couldn't call first?

Not a day goes by, in the world of technical support for roofing/waterproofing, without the dreaded, "So, we have this situation, and we need a recommendation." Whether it is a tech call or a site visit, hearing those words causes a veritable pit in your stomach. Don't get me wrong, providing technical support is an important part of our job and very gratifying, but rarely is the recommendation for the "situation" painless for anyone involved. After 30 years of being in the weather barrier industry as an installer, consultant, and manufacturer, I have been involved in countless "situation" conversations over the years and can assure you they're no fun. Let me give you an example.

We have a project right now that has Underseal pre-applied below grade waterproofing on the foundation wall of a parking garage that will be tying into the podium deck waterproofing. The situation occurred after the concrete contractor had finished placing curbing around the podium deck. (Fig. 1) The purpose of pre-applied waterproofing is to maximize the property usage by casting the concrete wall against it, eliminating the need for the wasted space of a trench. The membrane from the top of the shoring wall down (which was never intended to see the light of day) is sandwiched between the concrete wall and the surrounding shoring wall. The difficulty is that a flap of excess membrane of the pre-applied waterproofing must be left exposed above the shoring wall in the transition area and remain viable so it can be tied into the podium waterproofing at a later time. Obviously, that objective was not achieved.

How could such an important detail, such as the transition strip used to connect the two systems, be completely disregarded, and wadded up in the corner? The biggest reason is that only a handful of people really understand why that flap of random membrane hanging out there is so important. In this case, the concrete contractor didn't understand that flap was the critical connector piece for the two different systems. Because the overarching goal is to "get the work done," the concrete crew cut the membrane off at the top of the shoring wall and wadded the vertical leg up into the corner of the form making it completely unusable. It is critical junctions, just like this situation, that 90% of all water intrusion has been documented to occur. Considering the multiple trades and various connections between the numerous systems, it is easy to see why most leaks happen at those critical junctions better known as terminations, transitions, and penetrations.

What is the fix for a situation like this one? Unfortunately, the correction is often demanding and sometimes completely unreasonable to perform. We see it every day. Major grade beams cast without waterproofing. Large banks of utility lines run through the waterproofing without be detailed. Truly, the only way to properly correct those situations is to jack out the concrete and start over. Rarely can a project absorb the additional cost or delayed schedule to make such extensive corrections. In the pictured situation example, the fill under the podium deck must be excavated exposing the membrane to install a transition membrane. Let's face, when we must correct a situation, the fix is expensive and time consuming, and would have been simpler to address prior to actual construction.

Who is responsible to prevent this type of situation from happening? It is everyone's job, but the general contractor must take ownership. The difficulty is that the modern-day construction method of Design-Bid-Build is fragmented. All the participants are specialists focusing on a singular task unaware of how their work impacts the building as a whole. In fact, the contract documents intentionally silo the individual disciplines, and then isolate the lines of communication. The general contractor is obligated to

the owner to produce a building that meets the contractual agreement. Ultimately, the verification that the contract documents are constructible, and the coordination between the various trades is the responsibility of the general contractor.

How can this type of situation be avoided? One would say that the general contractor needs to do a better job, but the real issue is not that clear cut. Just like an architect, a general contractor cannot monitor every inch of the project. The amount of activity needed to construct a building is overwhelming. The general contractor that makes weathertight buildings typically has a single person responsible for the critical systems (E.g., HVAC, Structural, Building Envelope). That person can be an architect, a foreman, or a consultant, but the key attribute to the function of that person is them knowing where to look for the problems before they happen. By knowing the critical area to observe (termination, transitions, and penetrations), the correct questions can be directed to the correct resource for the correct answer.

Sadly, the number one cause of litigation in new construction is water intrusion. It is almost impossible to fathom...A new building leaking? Isn't the whole purpose of the building to provide shelter from the outside elements, particularly water? There are many reasons for a building to leak, but there are no good reasons. One of the most difficult things to do as technical support is to tell your customer that they have made a critical mistake and to correct it is going to be very costly. So, when it comes to terminations, transitions, and penetrations during construction, if you want to be on time, in budget and out of court, please call us before a detail becomes a "situation."

