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UNDERGROUND WATERPROOFING:

W. R. MEADOWS' PRECON® makes a splash on huge Arizona project

Installers can put down 50,000 sq. ft. of PRECON in a day, according to contractors at Marina Heights. Firestop Southwest's Tracy Smith notes that this is about double the installation rate for the same 6-7 man crew putting down bentonite sheets.

The aptly named Marina Heights is the largest office development in Arizona history – a five-building campus on a 20-acre site across the street from Arizona State University's Sun Devil Stadium in Tempe. Construction continues on the $600 million project that began in November 2013, although the first office tower – a nine-story structure – will open in October and a second will be ready for occupancy in the first half of 2016.

Marina Heights also is the state's largest underground waterproofing project. With two levels of parking beneath the entire campus, it sits along the Salt River on the shore of Tempe Town Lake. The water table is only 30 feet down and even in the dry desert, the annual monsoons every summer dump plenty of rain. Owner performance requirements stipulate that there be absolutely no water infiltration into the structure, one of the key reasons why W. R. MEADOWS was involved in this complex project.

"W. R. MEADOWS and its distributor team provided a complete package: the PRECON product itself and its lower installed cost, installation guidance, project monitoring, and flexibility in working with contractors. These were all critical factors in addressing Marina Heights' waterproofing challenges, and in the end, everyone wins."

Mike Bourassa, Senior Project Manager-Building Science for Intertek Architectural Testing

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A dedicated effort led decision-makers to select PRECON® - with its superior capabilities and lower installation cost - to be the waterproofing product of choice. A highly functional team was responsible for servicing the project, making sure the job was delivered on time and on budget. Constant communication and perseverance took place between Greg Neundorfer, W. R. MEADOWS' Western Division Technical sales representative and Tracy Smith of Firestop Southwest, the waterproofing installation sub-contractor, with huge assists from W. R. MEADOWS' distributor Smalley & Company's Rich Lemon, Rob Vallieu and Danny Sipe.

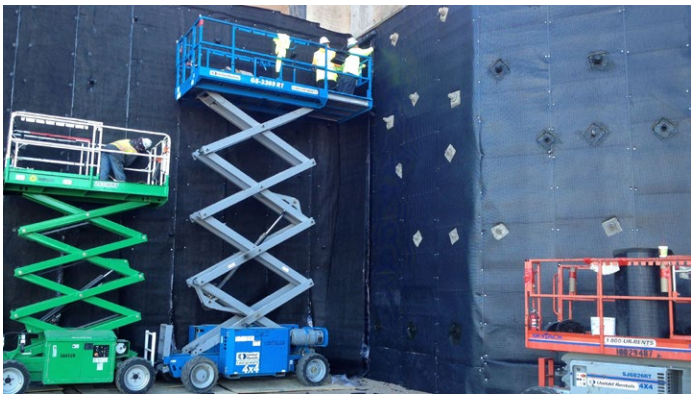
Marina Heights development stakeholders include Sunbelt Holdings and the design-build team of The Ryan Companies (also the general contractor) and architect The Davis Experience. In 2014, the National Association of Industrial and Office Parks named Marina Heights "Transaction of the Year". A LEED Silver design concept, most of the two million square feet of office space will serve as regional headquarters for one of the nation's largest insurance companies when fully completed in 2017.

Tight specs, schedule and site heighten installation pressure

Before the towers went up, excavators had to dig down and remove 400,000 cubic yards of dirt to make way for the two-level, below-grade garage. Next was the installation of a system to prevent water encroachment before pouring concrete. This meant the blindside application throughout the 20-acre site had to be watertight and done right the first time.

With zero property lines, excavation had to begin right at the edge of the site. Since In/Out below grade access was limited to only one ramp each, traffic congestion was an issue that impacted delivery of waterproofing materials. These issues paled, however, in comparison with finding a waterproofing system that could meet owner demands.

"Ordinarily I don't worry much about waterproofing under slab in Arizona," notes Mark Storck, Project Manager for The Ryan Companies. "But on a project this size, with strict



Crews install PRECON over previously put down MEL-DRAIN 5035 as part of the 130,000 square-feet of vertical installation.

owner requirements regarding infiltration and multiple water issues, it was a priority from Day One."

Tasked with preparing good-better-best waterproofing recommendations for the owners, architect and contractors, Mike Bourassa, Senior Project Manager-Building Science for Intertek Architectural Testing, points out, "This is the largest project most of us ever worked on with regard to below grade waterproofing issues. Performance requirements that the contractor is being held to are very clear, and few technologies measure up."

Bourassa reviewed familiar methods and cast a net for more. Options ranged from admixtures in concrete, to hot- and cold-applied liquid membranes, and sheet membranes using bentonite clay – a frequent choice in the Southwest. Initially, bentonite was written into project specifications.

The competitive PRECON value proposition was simple and strong, a better product with lower installed cost according to Rich Lemon, Desert Region Sales Manager for Smalley & Company. PRECON membrane has a patented plasmatic core that offers the lowest water vapor transmission (WVT) rate in the industry. As poured concrete cures, PRECON forms a mechanical bond, securing concrete to it. And there is the quick, easy installation that nearly doubles the square footage per day compared to bentonite.

Neundorfer and Sipe assembled for Firestop Southwest's Tracy Smith an onsite mockup of a small concrete pad and wall for installing PRECON materials.

"I've used Meadows' products on other jobs," Smith reveals, citing MEL-ROL® and HYDRALASTIC 836. "But this was my first time using PRECON."

The mockup confirmed what the data suggested. "We had our reservations at first," Storck says, but he and Smith agreed that PRECON per se – not to mention projected labor savings and lower installed cost – made sense.

PRECON passes early test with flying colors

Never was the wisdom of selecting PRECON more evident than early in the installation process. Rob Vallieu, a 26-year industry veteran and marketing specialist, recalled a day when crews put down nearly 50,000 sq. ft. of material. That night the skies erupted, dumping a deluge of rain on the Marina Heights site.

The next morning, no one was more delighted than Smith. "Bathtubs," he says. "Water-filled PRECON bathtubs showed that the installation was intact. If we had put down bentonite clay, we would have had to pull it out and reinstall." While shrugging off thunderous downpours, PRECON also helped Firestop Southwest stay ahead of concrete contractors. "You can't hold up concrete pours," Smith asserts. "About the only thing tighter than space on this site was our schedule. Contractors can't pour concrete until our blindside installation is done."

With many of the 400,000 cubic yards of dirt going out of "the hole" while waterproofing material was coming in, traffic and site congestion complicated the process.

"Initially, we were going to drop a trailer load of material in the hole for the Firestop crews," says Lemon, "but we couldn't get that trailer in-and-out with all the other equipment. So we shifted gears."

Smith created a spreadsheet with an estimated schedule of material needed. Sipe reviewed the scheduling and shipping requirements with W. R. MEADOWS customer service personnel to manage the materials flow. Smith then updated the information with daily usage reports, enabling Smalley to coordinate with Firestop's on-site PM, Ryan Olsen, to respond in a matter of hours. Firestop could call at 3 o'clock in the afternoon and have what they needed on-site the next morning.

No one was more pleased than The Ryan Companies' Storck. "Coordination among concrete and waterproofing contractors to get the shield down really helped keep this project moving."

In the end, W. R. MEADOWS exceeded all material delivery expectations. Over 15 truckloads of material arrived on time and led to Firestop Southwest getting their work done as planned and meeting the project schedule.

Two additional reasons why all went so smoothly with first-time PRECON users were up-front worker training, plus daily before-and-after installation inspections by W. R. MEADOWS' Neundorfer and Smalley personnel.

"The devil is in the details," Vallieu notes, by having installers read the product data sheet, discuss how much to put on, and point out key features – including differences between PRECON and other products. "They catch on quickly and it puts them on the right track."

Bourassa points out the W. R. MEADOWS training program with subcontractors means they, as well as everyone else involved in a project, can rely on the workmanship of installers; they know that it's being done in accordance with plans and specifications. "This also enables W. R. MEADOWS to stand behind its products, and fully warrant their performance."

"Diligent inspection was also a definite plus," asserts The Ryan Companies' Storck. Firestop Southwest's Smith concurs. "We wanted W. R. MEADOWS to inspect everything. Greg (Neundorfer) was out inspecting substrate before we laid material and afterward, to make sure the seams were right. He'd check all the penetration details to see that soil nails were detailed properly."

Sums up Intertek's Bourassa, "W. R. MEADOWS and its distributor team provided a complete package: the PRECON product itself and its lower installed cost, installation guidance, project monitoring, and flexibility in working with contractors. These were all critical factors in addressing Marina Heights' waterproofing challenges, and in the end, everyone wins. PRECON may have been new to many on the Marina Heights project, but not anymore."

"Water-filled PRECON bathtubs showed that the installation was intact. If we had put down bentonite clay, we would have had to pull it out and reinstall."

Tracy Smith *of Firestop Southwest, the waterproofing installation sub-contractor*

The morning after: *watertight "bathtubs" greet workers following heavy overnight rains after they installed 40,000 – 50,000 sq. ft of PRECON the previous day.*

Single source for multifaceted barrier projects

While PRECON took center stage in Arizona's largest underground waterproofing project, W. R. MEADOWS' CEM-KOTE® FLEX ST, manufactured by GEMITE, performed a noteworthy encore in water retaining vaults, coating walls, ceilings and floors in what Firestop Southwest's Smith says is "probably the largest cementitious waterproofing project ever done."

"There are multiple buildings and multiple waterproofing applications on a project this size," Smalley's Lemon adds. "We're using several W. R. MEADOWS products here." Primary underground items and totals include:

- **PRECON blindside/underslab membrane:** 810,000 sq. ft. (680,000 horizontal; 130,000 Vertical)
- **HYDRALASTIC 836 (cold-applied):** 30,000 sq. ft., Vertical
- **MEL-DRAIN™ 5035** rolled matrix drainage system: 160,000 sq. ft., vertical
- **CEM-KOTE FLEX ST cementitious waterproofing:** 70,000 sq. ft., water retaining vaults, tunnels

Plus varying amounts of products and system components such as BEM detail membrane, for sealing around soil nails, MEL-ROL self-adhering membrane, detail fabrics, tape and more.

PRECON is a composite sheet membrane comprised of a non-woven fabric and elastomeric membrane bonded to an exclusive plasmatic matrix. This new product provides a permanent seal between the membrane and poured concrete wall or floor. It helps prevent moisture migration into the structure and improves resistance to termites, methane and radon gas.

"Having a single source provider certainly helped us keep tabs on product usage, deliveries and other details, expediting progress and staying on schedule," Smith attests.

BUILDING ENVELOPE PRODUCTS

About W. R. MEADOWS

Since 1926, W. R. MEADOWS has been a leader in developing products that protect structures from moisture infiltration. From below-grade installations to rooftops and in-between, issue-specific products target and prevent potential, costly problems. Today, patented technologies enable more environmentally effective, efficient designs, and many of our products contribute LEED-certification "green" credits. With nine manufacturing facilities throughout the U.S. and Canada, the materials you need are within easy reach. For additional information, call 800.342.5976 or visit www.wrmeadows.com.

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