Hotel Deck Conversion Requires Some

Fast Walking





Story by Jack Innis
Photos by Angela Gaul







When Miami-based Pro-Tech Waterproofing and Caulking Co. was summoned to help create decking for a new hotel swimming pool, they placed a hot-rubber membrane to create a sealed waterproof system over the concrete. Masons later finished the job with brick pavers and planters.

Applying the 400-degree, fast-setting product requires working with care and quickness — about the pace of a fast walk — say those on the job site.



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"This is a physical job," said Pro-Tech Caulking and Waterproofing, Inc. foreman Don Hefta from the roof of the Eden Roc Hotel in Miami. "You have to do it at a fast walking pace. You can't run, but you can't take your time either."

Hefta's project is to install a ¼-inch hot-rubber-based membrane system on top of an existing 53,000 square-foot concrete roofing area on the hotel's second floor. The basic drill is to heat the material in a large kettle, pour it into smaller buckets, carry or cart it to the appropriate area, and squeegee it level before it sets. It's an exercise in teamwork and coordination to spread that much hot material quickly and safely.

When the crew is done, other tradesmen will lay down brick pavers and build planters to open up a new deck area for hotel guests at the 1950s-era, art deco, beachfront hotel. Working with fast setting, hot materials always requires nimble feet and alert minds, but in this case, a decision by the owner forced the crew to walk an even faster walk.

"The time allotted by the hotel was originally seven weeks but was



From the time molten rubber leaves the nozzle of this air-jacketed hot kettle *(above)***, the race against time begins. Crewmembers must carry or cart the hot product to its intended destination, pour the hot liquid onto the deck, then squeegee to uniform thickness** *(right)*. **Rapid cooling allows for only one or two passes with the squeegee.**

JOB at a GLANCE

PROJECT:

Install a ¼-inch hot-rubber-based membrane system on top of an existing concrete roofing area on the hotel's second floor. Pavers and planter boxes were applied by other tradesmen to complete project.

COATINGS CONTRACTOR:

Pro-Tech Caulking & Waterproofing, Inc.
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PRIME CLIENT:

Eden Roc Hotel, Miami, FL

SUBSTRATE:

Mainly existing concrete. Some areas had new concrete added to provide uniform leveling and to correct ponding problems.

SIZE:

53,000 square feet

SUBSTRATE CONDITION:

Existing concrete in very good condition, needing only power washing and modest filling and patching. Newly poured concrete subject to a minimum 14 day waiting period to achieve less than 5% moisture content level.

MATERIALS / PROCESS:

- Water blast and prime as necessary to create bond between concrete and rubberized asphalt.
- Seal all joints with caulk.
- Grind and prime all flashings and stand pipes.
- Spread one layer of hot rubberized asphalt.
- Apply membrane over still warm rubberized asphalt .
- Spread second layer of rubberized asphalt to achieve approximately 250 mils.
- Plug all drains and flood test.

SAFETY CONSIDERATIONS:

Hard hats, steel toed boots, long pants, long sleeved shirts, gloves and safety glasses to guard against accidental contact with hot, sticky liquid. Respirators as needed where natural rooftop ventilation not sufficient to prevent vapor accumulation.



trimmed down to three and a half so that everything could be ready in time for the holiday season," said Pro-Tech supervisor Bob Kopecki.

That required Pro-Tech to put two extra men on the project and switch to a 10-hour per day, six-day a week schedule.

The process began with Pro-Tech's 8-man crew water blasting the existing roof to remove dirt, dust and other contaminants that could affect adhesion of the rubberized asphalt, Carlisle CCW-500 Hot Applied Liquid Membrane.

The deck was in good condition, and all fill-holes, honeycombs and rock pockets were filled with the same maker's CCW-201 Sealant.

"Everything is pressure cleaned and caulked, the drains are ground down to bare metal and primed before caulking. The same with any penetration such as electrical conduit or irrigation lines for the deck planters," said Don Hefta. The 41-year-old foreman has 18 years experience in the coatings business, five years of which is in protective hot coatings.

Small cracks and cold joints were ground and filled, primed, and stripe coated with 125 mils of CCW-500 rubberized asphalt. Thicker cracks and expansion joints were given the same treatment as small cracks, but were overlaid with CCW-711-90 Sheet Membrane Flashing. All flashings were pushed into the still-warm rubber. The sealant was allowed to cure overnight.

"Both the sheet flashing and the expansion joints are completely embedded in the hot rubber, then another layer of rubber is poured over that," said Hefta. "The way Carlisle has us doing it, and you might do it differently in other places, is to pour hot on the perimeter and push it up the wall. If there's a flashing, you set it in the hot product then pour another hot coat over it. It's really locked in that way."

In some areas, fresh concrete was poured over existing concrete to level out the deck area or to correct ponding problems. That concrete was allowed to cure for at least 14 days prior to coating. In addition, readings were taken to make sure the concrete had less than 5 percent moisture.

The next step was to spray up to 8 mils of CCW-550 Primer (solvent based) with a Graco airless sprayer. On vertical transitions, the primer was run up at least 8 inches.

Atop the hotel in sunny Florida, the primer normally dried enough to coat within to two three hours.

Then the crew's fast walk began.

Forty-five pound blocks of rubber were placed in a Rubbermaster air-jacketed hot melt kettle. Rather than assigning that job to the newest man on the crew, Hefta

let one of his most experienced men tend the kettle (see "Sending a Rookie to Mix Paint is Asking for a Mix-up," page 16).

"Tony's been doing this forever and I know he's not going to mess up. If the material gets too hot, it's ruined and I know he's not going to recklessly toss in a cube and splash himself or someone else." Doing so would likely require a trip to the emergency room.

In addition to standard construction site safety gear such as steel-toed boots, hard hat, and safety glasses, the crew always wears long pants, long sleeved shirts, and gloves to protect against being splashed by the hot, sticky liquid. Any time they're working in an area without natural ventilation such as in planters and next to walls, the respirators go on.





While applicators are busy coating one segment of the concrete roof, a worker lays down a coat of primer with an airless sprayer on another section *(above left)*. **Elsewhere, a worker applies caulking to a vertical transition that will become part of a raised planter** *(above right)*.

Hefta also reasons that Tony's seniority merits his manning the kettle. "He's an older guy, he's earned that spot, and it saves him doing some of the heavy lifting."

The clock starts ticking when the hot rubber is poured from the kettle into buckets and is carried or rolled on carts to the work area.

"You have to work quick, and really keep an eye out for one another when you're handling the hot stuff," said Hefta. "You only get one or two passes with the squeegee before it sets up," said Kopecki.

With the product setting that quickly, there's no time to stop and measure the thickness. "The way you regulate thickness is to keep track of how many buckets you're pouring on a specific area," said Kopecki. "You can't use a notched trowel or squeegee to regulate thickness because the rubber is too viscous, so the guy at the other end of the squeegee knows how much product it will take over a certain area to achieve the mils in the specs. On larger projects we can use a grid system if we need to keep track of the thickness."

After each pour has set up, a job supervisor cuts open test areas at various locations to check thickness. The procedure is to make a small cut with a pocket knife and remove a small slab and check it with a micrometer. If an area is too thin, more product can be poured without priming or preparing the first layer. The inspection cuts are patched over with a few dabs of hot rubber. "The rubber sticks to itself real well," Kopecki said.

Although time might be saved by pumping — rather than carting and carrying — the hot liquid from the kettle to the remote reaches of the 53,000-square-foot roof, and there are kettles with pumps available, Pro-Tech



With the pool deck nearly ready for bricklayers, Pro-Tech crewmembers work to ready the area for a leak test — in this case, complete immersion in four inches of water for 48 hours. The rubberized asphalt decking system passed with flying colors.



All smiles after a job well done are Pro-Tech crewmen *(left to right)* **Eddie Bonilla, Eddie Alvaro, Donaldo Araque, Adrian Pena, foreman Donald Hefta, Julio Mantilla, and Tony Brailsford.**

kettle to the remote reaches of the 53,000-square-foot roof, and there are kettles with pumps available, Pro-Tech does not use them.

"I haven't had any luck with the pumps. The rubber sets too quick, usually inside the hoses," said Kopecki.

Once the first coat of rubber is squeezed down, the crew applies a CCW Reinforcing Fabric on the warm and tacky surface. The membrane sheets come in rolls that can measure up to 20 by 100 feet.

And the fast walk continues.

Directly on top of the fabric, the crew squeezes another hot layer of rubberized asphalt to attain a total thickness of about 250 mils, or a quarter of an inch thick.

In areas under which planters would be placed, the crew also applies a protection board topped with an environmental barrier and mat to prevent plant or tree roots from penetrating the waterproofing system. Atop the barrier and mat, the crew places a fabric drain system designed to allow water to run out off the planter and onto the roof. The fabric drain system has a built-in fabric layer to prevent soil clogging.

Before the brick layers can come in, the entire area is flood tested. To do so, all the drains are blocked up with inflatable plugs and the area is filled with about four inches of water. When the water stands for 48 hours with no leaks, the roof is deemed ready for brick laying.

Asked if he was concerned the flood test would uncover leaks, Hefta said, "Heck, no. Every one on my crew has at least five years' experience and knows their job inside and out. They're proud of their work."

Talking about his strict use of one company's materials when there are other products that could be used, Kopecki said, "Laying down a complete system by one company, Carlisle in this case, is a good way to go. We get to install a complete system with no compatibility problems and know that the company supplies all the accessories that go along with the system."

Hefta doesn't know yet where his next job will take him. As one of Pro-Tech's experts in waterproofing, he's liable to be working with hot rubber one week, plural-component spray the next, and rolling or shooting urethane the week after that. But he knows he'll be busy.

Pro-Tech has on average 60 or more employees and keeps about 50 jobs going at once. Since some jobs require pulling men off so that other trades can work, those 50 jobs translate into about 30 full time jobs. Pro-Tech's two, four or six man crews operate in South Florida only and find themselves per-forming about 85 percent of their business in new construction and 15 percent remedial.

"New construction is going great in this area right now. The remedial work also makes a good cushion in case construction slows," said Kopecki.

All in all, the roofing job went pretty smoothly, Hefta said. "Except day one. When we first came on site, they didn't have a crane down here yet because we had been asked to start early. We had to put the kettle on the roof with an extended reach fork lift. We had to be very careful not to extend the lift so far that the rear wheels came off the ground."

When asked if he would conceivably spend the night at the Eden Roc Hotel so he could enjoy the new deck he just helped create, Heft said, "Sure, maybe if things slow down a bit I could take some time off between jobs."

Until then for Hefta and his Pro-Tech crew, life continues at a fast walk. CP

VENDOR TEAM

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