

PROTECTIVE COATINGS APPLICATION



FUSION™ GUN REDUCES POLYUREA CONTRACTOR'S MAINTENANCE & REPAIRS



Graco's Reactor™ proportioner, heated hose and Fusion™ spray gun allowed B & H Coatings to increase production and reduce maintenance.

minute, increasing production. Furthermore, polyurea coatings are not sensitive to moisture during cure; and they can be applied and will cure at sub-zero temperatures. They're durable coatings too."

While polyurea provides contractors with a new dimension in fast coating technology, the material must be sprayed with a heated plural component proportioning system due to the material's extremely fast set time.

Recently, one of Hall's crews began testing the new electric-operated Reactor™ E-XP2 plural component proportioner, heated hose and new Fusion™ plural component air-purge spray gun introduced by Graco Inc. They've used the new proportioning and application system on a variety of polyurea jobs.

On a recent job the crew used the new Graco system in Ocean City, Maryland, to spray polyurea on four potable water tanks in the city's water treatment center.

"Ocean City contracted us to apply a polyurea protective coating on the rim and top 3-4 feet inside each of the uncoated, 20-year old tanks," says Hall. "However, after the tanks were drained and inspected it was discovered

CUSTOMER

B&H Coatings, Inc.

APPLICATION

Spraying polyurea inside potable water tanks.

PROBLEM

Tip clogging and high gun maintenance

SOLUTION

Graco Reactor™ E-XP2 proportioner and Fusion™ plural component spray gun

RESULTS

Gun maintenance and repairs were reduced significantly

Bruce Hall, President of B & H Coatings, Inc. in Hebron, MD is a contractor on the go! Typically, he's juggling 7 – 10 coating jobs at once – along the eastern seaboard and westward into Oklahoma. While the pace is generally hectic, he's confident in his company's ability to meet its customers' schedules and demands. His crews are trained, certified professionals who use quality materials and reliable equipment to get the job done right.

B & H specializes in a variety of coating services but in recent years the company has gained a reputation as one of the leading polyurea contractors in the region. According to Hall, polyurea is growing in popularity with both contractors and their customers. "Polyurea has no VOCs, no odor and no solvents. Most jobs can be completed in one spray application rather than 2-3 coats and the material cures quickly and dries fast to the touch in less than a

that the concrete walls were deteriorating faster than expected. The city decided it would be best to coat the entire insides of the tanks. Because of budget constraints, they gave us the go-ahead to spray the entire inside of one of the two largest tanks – approximately 8,000 sq. ft.”

Prepping the concrete before it is coated usually includes sand blasting, pressure washing and applying a chlorine cleaner to the substrate. On this job, the extreme pressure and abrasiveness of the blasting material would have been too harsh on the concrete. Instead, the crew was able to prep the surface simply by pressure washing it. They used water blast tips and fluid pressures at 3,500 psi to dislodge the scale and concrete flakes. After they removed the loose material they cleaned the surface with a chlorrid wash.

Next the crew rolled the General Polymer Corabond 3:1 primer. In addition to filling cracks and pinholes

in the substrate the sticky primer provides added adhesion for the polyurea.

B & H used Envirolastic AR 520 PW 1:1 ratio polyurea for the topcoat application. The coating is approved for concrete wall and floor applications, as well as tank and pipe lining. The coating has excellent elongation characteristics (520%) and carries NSF approval.

While part of the crew completed prepping the inside of the tank – a process that included taping the ends of the steel beams bolted to the concrete walls and covering the rotary arm in plastic to protect them from overspray – the rest of the crew got ready to spray the polyurea.

The proportioner and polyurea are kept in the crew's temperature controlled work trailer. Graco Monark® low-pressure feed pumps transfer the resin and isocyanate (ISO) from 55-gallon drums to the Reactor proportioner. In addition to

proportioning the resin and ISO, the Reactor's electronics provide diagnostic, data reporting, pressure readout, temperature and pressure controls, as well as auto-shut down capabilities to assure the system performs to B & H's and the material supplier's specific requirements.

From the proportioner, precise ratios of resin and ISO are pumped through 300 feet of heated hose to the spray gun. The hoses maintain the polyurea's temperature between 160°-170° F. “It takes only about 20 minutes to bring the material to this temperature when we start up each morning,” says Crew Supervisor Frank Wallace. “Then this temperature is maintained the entire day.”

Fluid pressure at the gun is maintained at a constant pressure too. The system's maximum fluid pressure is 3500 psi, assuring significant pressure to atomize even the most viscous coatings. “The optimum fluid pressure for the material we're spraying is between 2,000 to 2,300 psi,” says Wallace; “but we've got enough pressure to atomize virtually any material we'll ever use.”

At the end of the gun, Eddie Calloway, the crew's applicator, uses a flat fan spray tip which provides him with the optimum spray pattern and coverage on this particular job.

The polyurea provides maximum protection of the concrete substrate at 50-60 mils. Because the material cures so quickly, Calloway can inspect the area he's just sprayed and can touch up the surface as he moves along the wall. “It saves a lot of time,” he says. “I don't have to go back over my work.”

According to Calloway, one of the common problems associated with applying polyurea is the mixed materials' tendency to clog the spray gun's mix chamber and tip. When this occurs the applicator must stop work, tear down the gun and clean it. It's a job that can waste half-an-hour.

“Before I was using the Fusion spray gun, I had to deal with the tip clogging 3-4 times a day. I really wasted a lot of time,” he said. “The new Fusion gun hasn't clogged once!”

The gun's feature that eliminated this problem is the new patented



Air-Shot™ air cap that provides an extra blast of air across the orifice. The air stream reduces build-up around the tip's orifice where clogging typically occurs.

Polyurea was also tough on the seals of Calloway's old gun. He was replacing these seals daily. The Fusion gun's new rugged stainless steel side seals have reduced this chore to a once-a-month event. Again, increasing production. The fact that no tools are required to tear down the gun also reduces downtime related to gun maintenance.

Another feature that saves Calloway time is the gun's patented Quick Shot™ grease port. At the end of the day, he simply shoots grease into the head of the gun, coating the entire fluid section to prevent moisture exposure. It takes only a couple of seconds and assures the gun is ready to spray the next day. "At the end of each day I had to take the gun apart to clean the mixed polyurea out of the spray tip, mix chamber and seals. It took me at least a half-an-hour," he said.

"The whole system is state-of-the-art," adds Wallace. "And while the Reactor is a workhorse, the heated hose and Fusion spray gun are by far the best we've ever used."

Hall agrees. "Time is money! If I can increase production by using a durable material that can be applied faster, and equipment that can apply this material faster with less downtime — I'm interested. The jobs we've used the Graco Reactor proportioner and Fusion gun on have proved the equipment and material get the job done fast."

"And most important, we maintain our quality," he concludes. •



For additional product information or the name of a local authorized Graco distributor, call toll free 877-844-7226 in the U.S.A. In Europe call (32) 89 770 700

©2003 Graco Inc. Form 320514B 5/03 Printed in the USA