

Foundation contractor saves time with stay-in-place footing forms

With years of experience in his field, pouring foundations is second nature to concrete contractor Dave Detweiler. Daily operations began running even smoother, though, about seven years ago, when he decided to try a new kind of footing form on one of his projects.

A long-time user of aluminum footing forms, Detweiler tried using Form-A-Drain, a polyvinyl chloride (PVC) form by CertainTeed that stays in place after the foundation is poured, saving time on each job. In the past, crewmembers would have to go back to the jobsite, remove the aluminum forms, and clean them for use on another job. Using Form-A-Drain, though, his crews, usually four workers, are often able to form three foundations a day.

“There were times when we could get two foundations done in a day with the aluminum forms if the weather was warm, but even that was difficult,” Detweiler says. “Form-A-Drain allows us to turn over jobs more quickly.”

Detweiler is the owner of Uni-Foundations in Orrstown, Pa. In business since 1997, Uni-Foundations

has 25 employees and does residential foundation work throughout Pennsylvania and Maryland. Detweiler’s crews now use Form-A-Drain on nearly all of his projects. He’s seen the biggest time and labor savings in multifamily housing projects. Setting the Form-A-Drain takes anywhere from one to three hours, depending on the foundation size. The crews usually average about 200 lineal feet of foundations a day, or 1000 feet per week.

“As long as you’ve got an unlimited stock of Form-A-Drain, you’re unlimited on how many jobs you can do,” Detweiler says. “We can form the whole foundation and pour it without having to go back and strip and clean the forms.”

The installation starts with a layout detailing the required number of 12-foot lineals, couplings, corners, and drain outlets. Detweiler and his crew draw up their blueprints using AUTOCAD. The blueprints give an accurate layout of the projected foundation and show exactly how long the Form-A-Drain lineals should be trimmed and where each piece should go. The crew then cuts the lineals to the required length with a handsaw or power saw before going to the jobsite. This method has simplified operations even further, Detweiler says.

“The computer gives you everything you need,” he says. “You can

just trim down the lineals and go. Once the crew gets to the jobsite, they simply put everything in the hole, look at the blueprints, lay out the Form-A-Drain, and put it together.”

The crew inserts trimmed pieces into couplings, corners, or outlets to construct each side of the footing form. Corners, which come pre-made in 45- or 90-degree angles, are secured in place with rebar stakes. On the rare occasion that a project calls for something other than a 45- or 90-degree corner, Detweiler and his crew fabricate a corner piece of the desired angular measurement in their workshop. After assembly, the form is leveled using grade stakes. A laser level or stringline is used to set the desired elevation.

The hollow, perforated forms also provide an effective foundation drainage system, and, when specified, vent pipe can be connected for radon evacuation, an important issue for many of Detweiler’s customers. The Environmental Protection Agency lists very high levels of radon for much of southern Pennsylvania and northern Maryland. Installing a radon evacuation system during home construction allows customers to save money and prevent radon exposure in the home, Detweiler says. “I think the customers like that. It’s just another thing they won’t have to worry about.”



Carbon fiber wrap repair

Reinforced concrete columns at the Vulcan Chemicals (OxyChem) plant in Wichita, Kan., had suffered severe damage from the extreme conditions within a chloralkali cell room. The chemicals in the room had attacked the concrete and reinforcing steel, seriously decreasing the columns' capacity. The owner wanted not only to restore the capacity but actually increase it by 35% over the design value to support a larger crane. The solution was to apply HJ3's cementitious grout to re-form the columns and then apply three layers of HJ3's B-Series carbon wrap top-coated with HJ3's epoxy-novolak. With 24 columns to repair, the contractor completed one 2x2x18-foot column each day. HJ3 performed full turnkey engineering services to assure proper load transfer during the repair work. For more information on HJ3's products and services visit www.hj3.com.



Above, left: Deteriorated concrete and steel were removed prior to re-forming the column. Above, right: Cementitious grout was used to reform the column. Below, left: After wrapping the column with carbon fiber sheets, workers applied a finish coat of epoxy-novolak.