FARWEST CORROSION CONTROL COMPANY

The Corrosion Monitor

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Topics

Down-hole Pin Brazing 17 Feet Below Surface

Attaching test leads to buried piping is nothing new to the construction group at Farwest Corrosion. In fact, we perform this task hundreds of times a year. But when the pipe in question happens to be over 17 feet deep, under a paved road, surrounded by electrical duct banks, oxygen lines, and various other buried pipelines and utilities, it gets a little trickier. Couple that with the pipeline owner requiring a pin-braze connection and we are now in uncharted territory.

These are the circumstances that the Farwest Corrosion construction group faced on a recent project for a sanitation district. Although excavating to the pipeline by traditional means was certainly possible, it was also cost-prohibitive due to the size and manner of the excavation required to expose piping in such crowded quarters. With a little innovation and a lot of brainstorming, we came up with an inexpensive solution that resulted in successful pin braze connections with very limited surface restoration. (We may have even broken a record along the way!)

We knew the solution was a "key-hole" excavation. This is when a small diameter hole is vacuum excavated to expose the substructure with limited surface damage. This technique is often used to locate buried pipelines and utilities. The challenge for us was being able to sufficiently prepare the pipe, make the braze connection, and repair the coating 17 feet underground.

BAC manufactures the Easy Bond Reach System (EBRS) for pin brazing, but the extension is limited to approximately 8 feet. Discussions with BAC and their U.S. Representative led us to believe that pin-brazing at that depth was theoretically possible; it just had never been done before. Our installers went to work on modifying the EBR system and ultimately developed a pin braze gun that could be extended to reach a depth of 22 feet if needed. Continued next page...

Northeast Warehouse Opens

We're pleased to announce that Farwest has opened an office and warehouse in eastern Pennsylvania. The 10,000 square foot facility, located at 6 Pheasant Run in Newtown (Bucks County), will be used to maintain a large inventory of cathodic protection and corrosion related products. This new location is key to our goal to provide future and existing clients in the region with local inventory and technical services.

Heading the facility in Newtown is Ms. Laura Bauer, Northeast Regional Manager. Laura is responsible for the new operation as well as continuing customer satisfaction. She, and her team, are now available to assist clients with product selection, technical needs, and more. We're also pleased to announce that Mr. Rob Geib has joined the Farwest team in Newtown and will head our engineering and technical services efforts in the region. Rob is a NACE certified Cathodic Protection Specialist with over 15 years of experience in cathodic protection and corrosion control, with emphasis on the oil and gas pipeline industry.

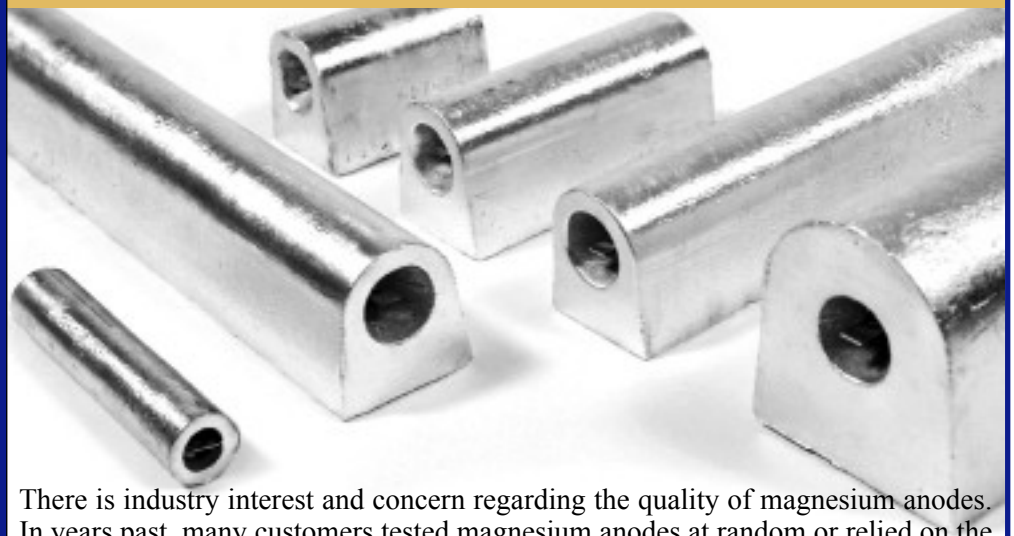
We're very excited for this new opportunity in the northeast. If we can be of service, please contact Laura or Rob at 215-579-1732.

Pin Brazing - *Continued...*

Next we began modifying a mini sand blaster and grinding disk so that they could properly prepare the surface at similar depths. Now we needed a way to repair the coating and encapsulate the weld. We consulted with Jim Tolly, Farwest Corrosion's coating specialist, for a coating recommendation. Jim recommended that we use Denso's Protal 7200. This fast cure, high build epoxy gave us the ability to mix the product at the surface and pour it down the hole until the exposed pipe and weld were covered. In order to ensure the system would work, we built a mock-up in our yard by placing 12" PVC casing on the side of our building with a piece of steel pipe at the base. The crew then went on the roof and performed an entire down-hole simulation. Confident that we had a working system we scheduled the project.

All of our hard work and efforts paid off and the project went as planned. At the end of the day, we left the jobsite with a satisfied customer and a new capability for down-hole lead wire attachment that is unique to Farwest Corrosion.

Magnesium Anode Quality - Why Worry?



There is industry interest and concern regarding the quality of magnesium anodes. In years past, many customers tested magnesium anodes at random or relied on the manufacturing and distributing companies to ensure anode quality. With the departure of the U.S. anode manufacturers, the industry began to notice deterioration in both, anode quality and performance.

What is acceptable anode performance? Two factors; open circuit potential and current efficiency, are the industry standards by which anode performance is, or should be, measured. These factors are confirmed by conducting laboratory tests in accordance to ASTM G97 requirements. At the conclusion of the test, open circuit potential is measured and weight loss is utilized to determine current efficiency.

While there are no specific industry standards for open circuit potential and current efficiency, the "accepted" levels are typically:

- Open Circuit Potential: –1.70 volts with respect to a saturated Calomel electrode
- Current Efficiency: 50% or 500 amp hours

If an anode falls below –1.70 volts open circuit potential there will be a corresponding decrease in output current. Simply put, the anode will produce less DC or protective current. Similarly, if anode efficiency drops below the 50% target, the life of the anode will decrease.

Our reputation and commitment to quality dictates that we provide the best products possible. Therefore, our goal is to consistently provide high potential anodes capable of meeting industry standards for performance and life. Our *UltraMag* anode is the answer to that goal. We work closely with our raw material suppliers to ensure high quality anodes and we conduct third party ASTM G97 tests to reaffirm this commitment. We are happy to provide those test results with interested customers when requested.

In conclusion, an anode purchased at the lowest cost may not ultimately be the lowest cost anode. Depending on the performance characteristics of that anode, the real cost may not be evident at time of purchase. Be careful what you're buying and ask for test results to ensure quality.