Corrosion College: Knowledge Beats Desert Heat

The professionals at K & F Electric are electrical contractors specializing in the water and waste industry, where applications are known for extremely corrosive environments in which unprotected electrical products can deteriorate quickly, cause safety concerns, and increase costs. In fact, K&F noticed additional labor and material costs on its galvanized rigid coated conduit installations. After analysis, it became apparent that Arizona's extreme temperatures, up to 120&#176F in the summer, were causing the conduit to lose the bond of its PVC coating during the threading process and installation. Compromised coating can result in bare steel being subject to corrosion damage and ultimate system failure.

K& F looked into a variety of options to prevent the breakdown of the bond. During the course of this investigation, installers from K&F attended Corrosion College, an accredited institution in Gilmer, TX, providing solutions for the prevention of industrial corrosion and instruction on the PVC bonding process. PVC and polyurethane coatings have been proven to have excellent chemical resistance to acids and other chemicals that attack galvanized zinc coating. As long as the PVC and polyurethane coating adhesion remains, the conduit provides years of service. However, PVC and polyurethane coatings cannot provide protection without proper preparation of the conduit galvanized zinc surfaces. It has been shown that 80 to 90 percent of premature coating failures are caused by improper or inadequate surface cleaning and preparation. Most failures are caused by contaminants left on the surface when the coating is applied.
Proper surface preparation of galvanized rigid steel conduit for PVC and polyurethane coating is a very difficult task. Plasti-Bond RedH2OT, Perma-Cote, and KorKap, for example, are three brands of PVC galvanized conduit from Robroy Industries that rely on a two-step process. First, a mechanical surface-treatment process is used to promote coating adhesion. It's followed by a chemical cleaning process to remove surface contaminants. Both processes are stringently controlled to ensure that surfaces meet high standards for coating adhesion. After attending Corrosion College, K & F specified these three brands on new and renovated conduit installations. They have proven to be easier to work compared to other PVC-coated conduit. As a result, K&F Electric has seen a significant reduction in materials and labor costs.

Information for this article was provided by Dick Fritz, K & F Electric, Phoenix, AZ. Additional information about Corrosion College is available at www.corrosioncollege.com. Information about Plasti-Bond RedH2OT, Perma-Cote,

and KorKap is available from Robroy Industries, 1100 U.S. Hwy. 271 S., Gilmer, TX 75644, by calling 903-843-5591 or visiting www.robroy.com.

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